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Section II

Essentials of Accredited Residencies in Graduate Medical Education: Institutional and Program Requirements

Section II—Essentials of Accredited Residencies in Graduate Medical Education: Institutional and Program Requirements—begins with a preface containing general information about the three major phases of the education of physicians, the accreditation of graduate medical education programs, and a glossary of selected terms, followed by a copy of the Institutional Requirements effective July 1997. The bulk of Section II consists of Program Requirements organized by specialty-related subspecialty.

Preface

I. The Education of Physicians

Medical education in the United States occurs in three major phases.

A. Undergraduate Medical Education

Undergraduate medical education is the first or "medical school" phase. The medical school curriculum provides instruction in the sciences that underlie medical practice and in the application of those sciences to health care. Students learn basic information-gathering, decision-making, and patient-management skills in rotations through the various clinical services. Students are granted the MD or DO degree on the successful completion of the medical school curriculum and are eligible to undertake the next phase of medical education.

Accreditation of educational programs leading to the MD degree is the responsibility of the Liaison Committee on Medical Education (LCME). Accreditation of educational programs leading to the DO degree is the responsibility of the American Osteopathic Association.

B. Graduate Medical Education

Graduate medical education (GME), the second phase, prepares physicians for practice in a medical specialty. GME focuses on the development of clinical skills and professional competencies and on the acquisition of detailed factual knowledge in a medical specialty. This learning process prepares the physician for the independent practice of medicine in that specialty. The programs are based in hospitals or other health care institutions and, in most specialties, utilize both inpatient and ambulatory settings, reflecting the importance of care for adequate numbers of patients in the GME experience. GME programs, including Transitional Year programs, are usually called residency programs, and the physicians being educated in them, residents.

The single most important responsibility of any program of GME is to provide an organized educational program with guidance and supervision of the resident, facilitating the resident's professional and personal development while ensuring safe and appropriate care for patients. A resident takes on progressively greater responsibility throughout the course of a residency, consistent with individual growth in clinical experience, knowledge, and skill.

The education of resident physicians relies on an integration of didactic activity in a structured curriculum with diagnosis and management of patients under appropriate levels of supervision and scholarly activity aimed at developing and maintaining life-long learning skills. The quality of this experience is directly related to the quality of patient care, which is always the highest priority. Educational quality and patient care quality are interdependent and must be pursued in such a manner that they enhance one another. A proper balance must be maintained so that a program of GME does not rely on residents to meet service needs at the expense of educational objectives.

A resident is prepared to undertake independent medical practice within a chosen specialty on the satisfactory completion of a residency. Residents in a program accredited by the Accreditation Council for Graduate Medical Education (ACGME) typically complete educational requirements for certification by a specialty board recognized by the American Board of Medical Specialties (ABMS).

The accreditation of GME programs is the responsibility of the ACGME, its associated Residency Review Committees (RRCs) for the various specialties, and the Transitional Year Review Committee (TYRC)(hereafter referred to as "review committees"). Further information on the ACGME and the review committees is provided below.

C. Continuing Medical Education

Continuing medical education (CME) is the third phase of medical education. This phase continues the specialty education begun in graduate training; it reflects the commitment to life-long learning inherent in the medical profession.

The Accreditation Council for Continuing Medical Education (ACCME) is responsible for accrediting the providers of CME.

II. Accreditation of GME Programs

A. Accreditation, Certification, Licensure

In the context of GME, accreditation is the process for determining whether an educational program is in substantial compliance with established educational standards as promulgated in the institutional and program requirements. Accreditation represents a professional judgment about the quality of an educational program. Decisions about accreditation are made by the review committees under the authority of the ACGME.

Certification is the process for determining whether an individual physician has met established requirements within a particular specialty. The standards for certification are determined by the appropriate member specialty board recognized by the ABMS.

Licensure is distinct from both accreditation and certification. Licensure is a process of government through which an individual physician is given permission to practice medicine within a particular licensing jurisdiction. Medical licenses are granted by the Board of Medical Examiners (or the equivalent) in each licensing jurisdiction (the 50 states, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands).

B. Accreditation of Residency Programs

Accreditation of residency programs is a voluntary process. By participating in the process, residency programs undergo regular review. The review helps programs in their goals of attaining and maintaining educational excellence. The review also serves to inform the public, specialty boards, residents, and medical students whether specific residency programs are in substantial compliance with the standards that have been established for GME.

For a program to become accredited, the sponsoring institution must demonstrate a commitment to GME. The sponsoring institution must be in substantial compliance with the Institutional Requirements and must assume responsibility for the educational quality of its sponsored program(s). (Further information concerning a "sponsoring institution" is provided below.)

The Institutional Requirements, which have been established by the ACGME, apply to all institutions that seek to sponsor programs in GME. An assessment of whether institutions fulfill these requirements is made by the ACGME through its institutional review process and by the review committees through their program review process.

The program must demonstrate to its RRC that it is in substantial compliance with the Program Requirements for its particular

discipline and that it is sponsored by an institution in substantial compliance with the Institutional Requirements. Materials used by the review committees in making this determination include the results of the most recent institutional review conducted by the ACGME.

The Program Requirements are developed by each review committee for programs in its specialty. The Program Requirements specify essential educational content, instructional activities, responsibilities for patient care and supervision, and the necessary facilities of accredited programs in a particular specialty. In developing and updating Program Requirements, a review committee obtains comments on the proposed documents from interested parties and agencies. The review committee then decides on the final proposal to be submitted to the ACGME. The ACGME has final authority for approving all Program Requirements.

Accreditation actions taken by the review committees are based on information submitted by program directors and on the reports of site visitors. Actions of the committees, under the authority of the ACGME, determine the accreditation status of residency programs.

The ACGME is responsible for adjudication of appeals of adverse decisions and has established policies and procedures for such appeals.

Current operating policies and procedures for review, accreditation, and appeal are contained in the ACGME *Manual of Policies and Procedures for Graduate Medical Education Review Committees*. The *Manual* is reviewed annually and is revised as appropriate. (A copy of the *Manual*, as well as copies of the Institutional Requirements and of the Program Requirements, may be obtained from the Office of the Executive Director, ACGME, 515 N State St/Ste 2000, Chicago, IL, 60610.)

Information about the accreditation status of a residency program may be obtained by contacting the executive director of the ACGME.

C. Structure of the ACGME and of the RRCs

1. The ACGME is a voluntary association formed by five member organizations. Its member organizations are national professional bodies, each of which has major interests in and involvement with residency education.

    The five member organizations of the ACGME are as follows:

    American Board of Medical Specialties (ABMS)
    American Hospital Association (AHA)
    American Medical Association (AMA)
    Association of American Medical Colleges (AAMC)
    Council of Medical Specialty Societies (CMSS)

    Each member organization selects four representatives to the ACGME. The ACGME appoints two public members.

    The Resident Physician Section of the AMA, with the advice of other national organizations that represent residents, selects a resident representative to the ACGME.

    The Chair of the RRC Council, an advisory body of the ACGME, represents that group on the ACGME.

    The Secretary of the US Department of Health and Human Services designates a nonvoting representative of the federal government to the ACGME.

2. There is an RRC for each of the specialties in which certification is offered by a specialty board that is a member of the ABMS. Each RRC is sponsored by the AMA's Council on Medical Education, by the board that certifies physicians within that specialty, and in most cases, by the professional college or other professional association within the specialty.

Residency Review Committee Sponsoring Organizations

Residency Review Committee	Sponsoring Organizations	Residency Review Committee	Sponsoring Organizations
Allergy and Immunology	American Board of Allergy and Immunology (A Conjoint Board of the American Board of Internal Medicine and the American Board of Pediatrics) AMA Council on Medical Education	Ophthalmology	American Academy of Ophthalmology American Board of Ophthalmology AMA Council on Medical Education
Anesthesiology	American Board of Anesthesiology American Society of Anesthesiologists AMA Council on Medical Education	Orthopaedic Surgery	American Academy of Orthopaedic Surgeons American Board of Orthopaedic Surgery AMA Council on Medical Education
Colon and Rectal Surgery	American Board of Colon and Rectal Surgery American College of Surgeons AMA Council on Medical Education	Otolaryngology	American Board of Otolaryngology American College of Surgeons AMA Council on Medical Education
Dermatology	American Board of Dermatology AMA Council on Medical Education	Pathology	American Board of Pathology AMA Council on Medical Education
Diagnostic Radiology	American Board of Radiology American College of Radiology AMA Council on Medical Education	Pediatrics	American Academy of Pediatrics American Board of Pediatrics AMA Council on Medical Education
Emergency Medicine	American Board of Emergency Medicine American College of Emergency Physicians AMA Council on Medical Education	Physical Medicine and Rehabilitation	American Academy of Physical Medicine and Rehabilitation American Board of Physical Medicine and Rehabilitation AMA Council on Medical Education
Family Practice	American Academy of Family Physicians American Board of Family Practice AMA Council on Medical Education	Plastic Surgery	American Board of Plastic Surgery American College of Surgeons AMA Council on Medical Education
Internal Medicine	American Board of Internal Medicine American College of Physicians AMA Council on Medical Education	Preventive Medicine	American Board of Preventive Medicine AMA Council on Medical Education
Medical Genetics	American Board of Medical Genetics American College of Medical Genetics AMA Council on Medical Education	Psychiatry	American Board of Psychiatry and Neurology American Psychiatric Association AMA Council on Medical Education
Neurological Surgery	American Board of Neurological Surgery American College of Surgeons AMA Council on Medical Education	Radiation Oncology	American Board of Radiology American College of Radiology AMA Council on Medical Education
Neurology	American Academy of Neurology American Board of Psychiatry and Neurology AMA Council on Medical Education	Surgery	American Board of Surgery American College of Surgeons AMA Council on Medical Education
Nuclear Medicine	American Board of Nuclear Medicine AMA Council on Medical Education Society of Nuclear Medicine	Thoracic Surgery	American Board of Thoracic Surgery American College of Surgeons AMA Council on Medical Education
Obstetrics-Gynecology	American Board of Obstetrics and Gynecology American College of Obstetricians and Gynecologists AMA Council on Medical Education	Urology	American Board of Urology American College of Surgeons AMA Council on Medical Education

The Transitional Year Review Committee, which accredits 1 year of GME consisting of rotations in multiple clinical disciplines, is appointed directly by the ACGME.

The established RRCs and their respective sponsors are listed in the chart above.

III. A Glossary of Selected Terms Used in GME Accreditation

Applicants: Persons invited to come for an interview for a GME program.

Consortium: Two or more organizations or institutions that have come together to pursue common objectives (eg, GME). A consortium may serve as a "sponsoring institution" for GME programs if it is formally established as an ongoing institutional entity with a documented commitment to GME.

Desirable: A term, along with its companion "highly desirable," used to designate aspects of an educational program that are not mandatory but are considered to be very important. A program may be cited for failing to do something that is desirable or highly desirable.

Essential: (See "Must.")

Fellow: A term used by some sponsoring institutions and in some specialties to designate participants in subspecialty GME programs. The *Graduate Medical Education Directory* and the ACGME use "resident" to designate all GME participants in ACGME-accredited programs.

Institution: An organization having the primary purpose of providing educational and/or health care services (eg, a university, a medical school, a hospital, a school of public health, a health department, a public health agency, an organized health care delivery system, a medical examiner's office, a consortium, an educational foundation).

A. Major Participating Institution: An institution to which residents rotate for a required experience and/or those that require explicit approval by the appropriate RRC prior to utilization. Major participating institutions are listed as part of an accredited program in the *Graduate Medical Education Directory.*

B. Participating Institution: An institution that provides specific learning experiences within a multi-institutional program of

GME. Subsections of Institutions, such as a department, clinic, or unit of a hospital, do not qualify as participating institutions.

C. *Sponsoring Institution*: The institution that assumes the ultimate responsibility for a program of GME.

Institutional Review: The process undertaken by the ACGME to judge whether a sponsoring institution offering GME programs is in substantial compliance with the Institutional Requirements.

Intern: Historically, "intern" was used to designate individuals in the first year of GME; less commonly it designated individuals in the first year of any residency program. Since 1975 the *Graduate Medical Education Directory* and the ACGME have not used the term, instead referring to individuals in their first year of GME as residents.

Internal Review: The formal process conducted by a sponsoring institution to assess the educational effectiveness of its sponsored residency programs.

Must (Shall, Essential): Terms used to indicate that something is required, mandatory, or done without fail. These terms indicate absolute requirements.

Program: The unit of specialty education, comprising a series of graduated learning experiences in GME, designed to conform to the program requirements of a particular specialty.

Resident: A physician at any level of GME in a program accredited by the ACGME. Participants in accredited subspecialty programs are specifically included.

Scholarly Activity: Educational experiences that include active participation of the teaching staff in clinical discussions, rounds, and conferences in a manner that promotes a spirit of inquiry and scholarship; active participation in journal clubs, research conferences, regional or national professional and scientific societies, particularly through presentations at the organizations' meetings and publications in their journals; participation in research, particularly in projects that are funded following peer review and/or result in publications or presentations at regional and national scientific meetings; offering of guidance and technical support, eg, research design, statistical analysis, for residents involved in research; and provision of support for resident participation as appropriate in scholarly activities. May be defined in more detail in specific Program Requirements.

Shall: (See "Must.")

Should: A term used to designate requirements that are so important that their absence must be justified. The accreditation status of a program or institution is at risk if it is not in compliance with a "should."

Substantial Compliance: The judgment made by experts, based on all available information, that a sponsoring institution or residency program meets accreditation standards.

Suggested: A term, along with its companion "strongly suggested," used to indicate that something is distinctly urged rather than required. An institution or a program will not be cited for failing to do something that is suggested or strongly suggested.

Institutional Requirements

I. Institutional Organization and Commitment

The purpose of GME is to provide an organized educational program with guidance and supervision of the resident, facilitating the resident's professional and personal development while ensuring safe and appropriate care for patients. Sponsoring institutions, therefore, must be appropriately organized for the conduct of GME in a scholarly environment and be committed to excellence in both education and medical care. This commitment is exhibited by the provision of leadership and resources to enable the institution to achieve substantial compliance with the Institutional Requirements and to enable the educational programs to achieve substantial compliance with Program Requirements. This includes providing an ethical and professional environment in which the educational curricular requirements, as well as the applicable requirements for scholarly activity, can be met. The regular assessment of the quality of the educational programs is an essential component of this commitment.

A. Sponsoring Institution

1. A residency program must operate under the authority and control of a sponsoring institution (see definition for sponsoring institution in the Glossary under "Institution").
2. There must be a written statement of institutional commitment to GME that is supported by the governing authority, the administration, and the teaching staff.
3. Sponsoring institutions must be in substantial compliance with the Institutional Requirements and must ensure that their ACGME-accredited programs are in substantial compliance with the Program Requirements.
4. An institution's failure to comply substantially with the Institutional Requirements may jeopardize the accreditation of all of its sponsored residency programs.

B. Educational Administration

There must be an organized administrative system to oversee all residency programs sponsored by an institution. In addition, there must be a designated institutional official who has the authority and the responsibility for the oversight and administration of the GME programs.

1. Institutions must have a GME Committee (GMEC) that has the responsibility for monitoring and advising on all aspects of residency education. Voting membership on the committee must include residents nominated by their peers, appropriate program directors, other members of the faculty, and the accountable institutional official or his or her designee.
2. The committee must meet at least quarterly; minutes must be kept and be available for inspection by accreditation personnel.
3. The responsibilities of the committee must include
   a. establishment and implementation of policies that affect all residency programs regarding the quality of education and the work environment for the residents in each program.
   b. establishment and maintenance of appropriate oversight of and liaison with program directors and assurance that program directors establish and maintain proper oversight of and liaison with appropriate personnel of other institutions participating in programs sponsored by the institutions.
   c. regular review of all residency programs to assess their compliance with both the Institutional Requirements and Program Requirements of the relevant ACGME RRCs.
      1. The review must be conducted by the GMEC or a body designated by the GMEC, which should include faculty, residents, and administrators, both within and outside the depart-

ment in which the residency exists. The review must follow a written protocol approved by the GMEC. External reviewers may also be utilized as determined by the GMEC.

2. Reviews must be conducted between the ACGME program surveys.

3. While assessing the residency program's compliance with each of the program standards, the review should also appraise the following:

   a. The educational objectives of each program;

   b. The adequacy of available educational and financial resources to meet these objectives;

   c. The effectiveness of each program in meeting its objectives; and

   d. The effectiveness in addressing citations from previous ACGME letters of accreditation and previous internal reviews.

4. Examples of materials and data to be used in the review process should include the following:

   a. Institutional and Program Requirements from the Essentials of Accredited Residency Programs;

   b. Letters of accreditation from previous ACGME reviews;

   c. Reports from previous internal reviews of the program; and

   d. Interviews with the program director, faculty, and residents in the program and individuals outside the program deemed appropriate by the committee.

5. There must be documentation of the review, including recorded mechanisms to correct identified deficiencies. In addition, succinct summaries of each review are required as part of the ACGME institutional review document.

6. Although departmental annual reports are often important sources of information about a residency program, they do not in themselves necessarily meet the requirement for a periodic review.

d. Assurance that each residency program establishes and implements formal written criteria and processes for the selection, evaluation, promotion, and dismissal of residents in compliance with both the Institutional and relevant Program Requirements.

e. Assurance of an educational environment in which residents may raise and resolve issues without fear of intimidation or retaliation. This includes:

   1. Provision of an organizational system for residents to communicate and exchange information on their working environment and their educational programs. This may be accomplished through a resident organization or other forums in which to address resident issues.

   2. A process by which individual residents can address concerns in a confidential and protected manner.

   3. Establishment and implementation of fair institutional policies and procedures for academic or other disciplinary actions taken against residents.

   4. Establishment and implementation of fair institutional policies and procedures for adjudication of resident complaints and grievances related to actions which could result in dismissal or could significantly threaten a resident's intended career development.

f. Collecting of intra-institutional information and making recommendations on the appropriate funding for resident positions, including benefits and support services.

g. Monitoring of the programs in establishing an appropriate work environment and the duty hours of residents.

h. Assurance that the residents' curriculum provides a regular review of ethical, socioeconomic, medical/legal, and cost-contain-

ment issues that affect GME and medical practice. The curriculum must also provide an appropriate introduction to communication skills and to research design, statistics, and critical review of the literature necessary for acquiring skills for lifelong learning. There must be appropriate resident participation in departmental scholarly activity, as set forth in the applicable Program Requirements.

C. Institutional Agreements

When resident education occurs in a participating institution, the sponsoring institution continues to have responsibility for the quality of that educational experience and must retain authority over the residents' activities.

Therefore, current interinstitutional agreements must exist with all of its major participating institutions.

The sponsoring institution must ensure that for each accredited program appropriate letters of agreement exist between the sponsoring institution and the participating institution. These agreements should

1. identify the officials at the participating institution or facility who will assume administrative, educational, and supervisory responsibility for the resident(s);

2. outline the educational goals and objectives to be attained within the participating institutions;

3. specify the period of assignment of the residents to the participating institution, the financial arrangements, and the details for insurance and benefits;

4. determine the participating institution's responsibilities for teaching, supervision, and formal evaluation of the residents' performances; and

5. establish with the participating institution the policies and procedures that govern the residents' education while rotating to the participating institution.

D. Accreditation for Patient Care

Institutions sponsoring or participating in GME programs should be accredited by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), if such institutions are eligible. If an institution is eligible for JCAHO accreditation and chooses not to undergo such accreditation, then the institution should be reviewed by and meet the standards of another recognized body with reasonably equivalent standards. If the institution is not accredited, it must provide a satisfactory explanation of why accreditation has not been either granted or sought.

E. Quality Assurance

Institutions participating in GME must conduct formal quality-assurance programs and review complications and deaths.

1. All residents should receive instruction in quality-assurance/performance improvement. To the degree possible and in conformance with state law, residents should participate in appropriate components of the institution's performance improvement program.

2. As part of the educational program, it is important that autopsies be performed whenever possible and appropriate. A sufficient number of autopsies representing an adequately diverse spectrum of diseases should be performed to provide an adequate educational experience and to enhance the quality of patient care.

3. Institutions participating in GME must have a medical records system that is available at all times and documents the course of each patient's illness, and care. The medical records system must be adequate to support the education of residents and quality-assurance activities and provide a resource for scholarly activity.

F. Compliance with ACGME Policies and Procedures

Sponsoring institutions must ensure that their ACGME-accredited programs are in substantial compliance with ACGME policies and procedures as defined in the ACGME *Manual of Policies and Procedures for Graduate Medical Education Review Committees*. Of particular note are those policies and procedures that govern "Administrative Withdrawal of Accreditation," an action that is not subject to the appeals process:

1. A program may be deemed to have voluntarily withdrawn from the ACGME accreditation process, and an RRC may withdraw accreditation, if the program is not in substantial compliance with:
   a. site visit and program review policies and procedures;
   b. directives associated with an accreditation action; or
   c. requests by the RRC for information.
2. A program that is judged to be delinquent in payment of fees is not eligible for review and will be notified by certified mail, return receipt requested, of the effective date of the withdrawal of accreditation. On that date, the program will be removed from the list of ACGME-accredited programs.

II. Residents

A. Resident Eligibility and Selection

The sponsoring institution must have written policies and procedures for the recruitment and appointment of residents that comply with the requirements listed below, and it must monitor the compliance of each program with these procedures.

1. Resident Eligibility
   Applicants with one of the following qualifications are eligible for appointment to accredited residency programs:
   a. Graduates of medical schools in the United States and Canada accredited by the Liaison Committee on Medical Education (LCME.)
   b. Graduates of colleges of osteopathic medicine in the United States accredited by the American Osteopathic Association (AOA).
   c. Graduates of medical schools outside the United States and Canada who meet one of the following qualifications:
      1. Have received a currently valid certificate from the Educational Commission for Foreign Medical Graduates or
      2. Have a full and unrestricted license to practice medicine in a US licensing jurisdiction.
   d. Graduates of medical schools outside the United States who have completed a Fifth Pathway program provided by an LCME-accredited medical school. [*Note:* A Fifth Pathway program is an academic year of supervised clinical education provided by an LCME-accredited medical school to students who meet the following conditions: (1) have completed, in an accredited college or university in the United States, undergraduate premedical education of the quality acceptable for matriculation in an accredited United States Medical school; (2) have studied at a medical school outside the United States and Canada but listed in the *World Health Organization Directory of Medical Schools*; (3) have completed all of the formal requirements of the foreign medical school except internship and/or social service; (4) have attained a score satisfactory to the sponsoring medical school on a screening examination; and (5) have passed either the foreign Medical Graduate Examination in the Medical Sciences, Parts I and II of the examination of the National Board of Medical Examiners, or Steps 1 and 2 of the United States Medical Licensing Examination (USMLE).]

2. Resident Selection
   a. The sponsoring institution must ensure that programs select from among eligible applicants on the basis of their prepared-

ness, ability, aptitude, academic credentials, communication skills, and personal qualities such as motivation and integrity. Programs must not discriminate with regard to sex, race, age, religion, color, national origin, disability, or veteran status.
   b. In selecting from among qualified applicants, it is strongly suggested that institutions and all of their sponsored programs participate in an organized matching program, where available, such as the National Resident Matching Program (NRMP).

3. Enrollment of Noneligibles
   The enrollment of noneligible residents may be a cause for withdrawal of accreditation of the involved program.

B. Resident Participation in Educational Activities

Institutions must ensure that residents have the opportunity to

1. develop a personal program of learning to foster continued professional growth with guidance from the teaching staff.
2. participate in safe, effective, and compassionate patient care, under supervision, commensurate with their level of advancement and responsibility.
3. participate fully in the educational and scholarly activities of their program and, as required, assume responsibility for teaching and supervising other residents and students.
4. participate as appropriate in institutional programs and medical staff activities and adhere to established practices, procedures, and policies of the institution.
5. participate on appropriate institutional committees and councils whose actions affect their education and /or patient care.
6. submit to the program director or to a designated institutional official at least annually confidential written evaluations of the faculty and of the educational experiences.

C. Resident Support, Benefits, and Conditions of Employment

Sponsoring and participating institutions should provide all residents with appropriate financial support and benefits. Compensation of residents and distribution of resources for the support of education should be carried out with the advice of the GMEC.

1. Financial Support: Adequate financial support of residents is necessary to ensure that residents are able to fulfill the responsibilities of their educational programs.
2. Applicants: Applicants for GME programs must be informed in writing of the terms and conditions of employment and benefits including financial support, vacations, professional leave, parental leave, sick leave, professional liability insurance, hospital and health insurance, disability insurance, and other insurance benefits for the residents and their family, and the conditions under which living quarters, meals and laundry or their equivalents are to be provided.
3. Contracts: Sponsoring institutions must provide residents with a written agreement or contract outlining the terms and conditions of their appointment to an educational program, and the institutions must monitor the implementation of these terms and conditions by the program directors.
   The agreement must contain or reference at least the following:
   a. Financial support
   b. Vacation policies
   c. Professional liability insurance in conformity with II.C.6, below
   d. Disability insurance and other hospital and health insurance benefits for the residents and their family in conformity with II.C.6, below
   e. Professional, parental, and sick-leave benefits in conformity with II.C.7, below

f. Conditions under which living quarters, meals, and laundry or their equivalents are to be provided

g. Counseling, medical, psychological, and other support services in conformity with II.C.8 and 9. below

h. Institutional policies covering sexual and other forms of harassment.

4. The agreement must also delineate or reference specific policies regarding

a. resident's responsibilities

b. duration of appointment and conditions for reappointment

c. professional activities outside the educational program

d. grievance procedures in conformity with I.B.e.4.

5. Liability Insurance: Residents in GME must be provided with professional liability coverage for the duration of training. Such coverage must provide legal defense and protection against awards from claims reported or filed after the completion of GME if the alleged acts or omissions of the residents are within the scope of the education program. The coverage to be provided should be consistent with the institution's coverage for other medical/professional practitioners. Each institution must provide current residents and applicants for residency with the details of the institution's professional liability coverage for residents.

6. Disability Insurance: Institutions sponsoring GME must provide access to insurance, where available, to all residents for disabilities resulting from activities that are part of the educational program.

7. Leave of Absence: There must be a written institutional policy on leave (with or without pay) for residents that complies with applicable laws. The institution must provide residents with a written policy concerning the effect of leaves of absence, for any reason, on satisfying the criteria for completion of a residency program.

8. Counseling Services: GME places increasing responsibilities on residents and requires sustained intellectual and physical effort. Therefore, institutions should facilitate resident access to appropriate and confidential counseling, medical and psychological support services.

9. Physician Impairment: Institutions must have written policies that describe how physician impairment, including that due to substance abuse, will be handled. In addition, institutions should provide an educational program for residents regarding physician impairment, including substance abuse.

10. Residency Closure/Reduction: If an institution intends to reduce the size of a residency program or to close a residency program, the institution must inform the residents as soon as possible. In the event of such a reduction or closure, institutions must allow residents already in the program to complete their education or assist the residents in enrolling in an ACGME-accredited program in which they can continue their education.

11. Restrictive Covenants: ACGME-accredited residencies must not require residents to sign a non-competition guarantee.

D. Resident Supervision, Duty Hours, and Work Environment

Institutions must ensure that their GME programs provide appropriate supervision for all residents, as well as a duty hour schedule and a work environment, that is consistent with proper patient care, the educational needs of residents, and the applicable Program Requirements.

1. Supervision: There must be sufficient institutional oversight to assure that residents are appropriately supervised. Residents must be supervised by teaching staff in such a way that the residents assume progressively increasing responsibility according to their level of education, ability, and experience. On-call schedules for teaching staff must be structured to ensure that supervision is readily available to residents on duty. The level of responsibility accorded to each resident must be determined by the teaching staff.

2. Duty Hours: The sponsoring institution must ensure that each residency program establishes formal policies governing resident duty hours that foster resident education and facilitate the care of patients.

a. The educational goals of the program and learning objectives of residents must not be compromised by excessive reliance on residents to fulfill institutional service obligations. Duty hours, however, must reflect the fact that responsibilities for continuing patient care are not automatically discharged at specific times. Programs must ensure that residents are provided appropriate backup support when patient care responsibilities are especially difficult or prolonged.

b. Resident duty hours and on-call time periods must not be excessive. The structuring of duty hours and on-call schedules must focus on the needs of the patient, continuity of care, and the educational needs of the resident. Duty hours must be consistent with the Institutional and Program Requirements that apply to each program.

3. Work Environment: Sponsoring institutions must provide services and develop systems to minimize the work of residents that is extraneous to their educational programs, ensuring that the following conditions are met:

a. Residents on duty in the hospital must be provided adequate and appropriate food services and sleeping quarters.

b. Patient support services, such as intravenous services, phlebotomy services, and laboratory services, as well as messenger and transporter services, must be provided in a manner appropriate to and consistent with educational objectives and patient care.

c. An effective laboratory, medical records, and radiologic information retrieval system must be in place to provide for appropriate conduct of the educational programs and quality and timely patient care.

d. Appropriate security and personal safety measures must be provided to residents in all locations including but not limited to parking facilities, on-call quarters, hospital and institutional grounds, and related clinical facilities (eg, medical office building).

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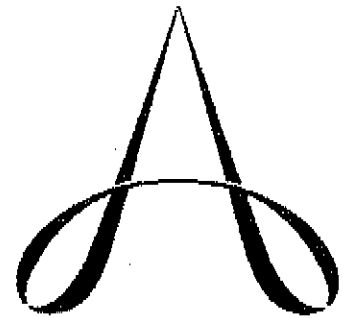
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The program must possess a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of residents for each major assignment and for each level of the program. This statement must be distributed to residents and faculty, and must be reviewed with residents prior to their assignments. [as further specified by the RRC]

B. Specialty Curriculum

The program must possess a well-organized and effective curriculum, both didactic and clinical. The curriculum must also provide residents with direct experience in progressive responsibility for patient management. [as further specified by the RRC]

C. Residents Scholarly Activities

Each program must provide an opportunity for residents to participate in research or other scholarly activities, and residents must participate actively in such scholarly activities. [as further specified by the RRC]

D. ACGME Competencies

(N.B.: Section V. D. does not apply to certain subspecialties)

The residency program must require its residents to obtain competence in the six areas listed below to the level expected of a new practitioner. Programs must define the specific knowledge, skills, behaviors, and attitudes required, and provide educational experiences as needed in order for their residents to demonstrate the following:

Patient care that is compassionate, appropriate, and effective for the treatment of health programs and the promotion of health;

Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patience care;

Practice-based learning and improvement that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care;

Interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals;

Professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds;

System-based practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Duty Hours and the Working Environment

...with a sound didactic and clinical education ...planned and balanced with concerns for patient ...well-being. Each program must ensure that the ...of the program are not compromised by excessive reliance on residents to fulfill service obligations. Didactic and clinical education have priority in the allotment of residents' time and assignments must recognize that faculty and residents have responsibility for the safety and well-being...

...supervised by qualified faculty. The program must ...evaluate, direct, and document adequate supervision at all times. Residents must be provided with ...means for communicating with supervising...

2. Faculty schedules must be structured to provide residents with continuous supervision and consultation.

3. Faculty and residents must be educated to recognize the signs of fatigue, and adopt and apply policies to prevent and counteract its potential negative effects.

B. Duty Hours

1. Duty hours are defined as all clinical and academic activities related to the residency program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities such as conferences. Duty hours do *not* include reading and preparation time spent away from the duty site.

2. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.

3. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. *One day* is defined as 1 continuous 24-hour period free from all clinical, educational, and administrative duties.

4. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

C. On-call Activities

The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. *In-house call* is defined as those duty hours beyond the normal work day, when residents are required to be immediately available in the assigned institution.

1. In-house call must occur no more frequently than every third night, averaged over a 4-week period.

2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6 additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care. [as further specified by the RRC]

3. No new patients may be accepted after 24 hours of continuous duty. [as further specified by the RRC]

4. *At-home call* (or *pager call*) is defined as a call taken from outside the assigned institution.

   a) The frequency of at-home call is not subject to the every-third-night limitation. At-home call, however, must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.

   b) When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.

   c) The program director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

D. Moonlighting

1. Because residency education is a full-time endeavor, the program director must ensure that moonlighting does not interfere with the ability of the resident to achieve the goals and objectives of the educational program.

2. The program director must comply with the sponsoring institution's written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements.
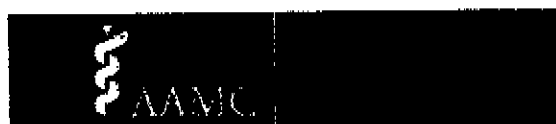
Tomorrow's Doctors, Tomorrow's Cures

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AAMC Reporter: January 2005

Reporter Archive

AAMC Newsroom

Managing Editor:

Scott Harris
sharris@aamc.org

A Word from the President: "Reassert the 'E' in GME"

I'm not big on New Year's resolutions, but there is one thing I'd like to resolve this year. And that's the debate about the fundamental nature of residency training: Are residents primarily students who perform some useful services as an inherent part of their education, or are they primarily employees who happen to learn something in the course of doing a job?

Now, when I was a medicine resident 40+ years ago... (I hate to do this to you, but it's important to remember how we got to where we are)... there was no such debate. Or, more accurately, there was no need for such a debate. We certainly performed a lot of services, being on call every other night and every other weekend. But there was plenty of time for education — including leisurely rounds twice a day, conferences, library searches, lengthy discussions with consultants, mini lectures and seminars with students.

As an example of the pace of hospital activities at that time, patients with routine, uncomplicated myocardial infarctions were kept in the hospital for three solid weeks! And they rarely required more attention than a daily greeting and a blood pressure check. Uncomplicated lobar pneumonia, acute asthma attacks, even acute gouty arthritis were common admitting diagnoses to the medical service. There were no ICUs, few ventilators, no dialysis machines, not even central lines to place. Life seemed pretty hectic to us at the time, but in retrospect, we had it relatively easy.

By contrast, today's resident lives in a different world with a more frenzied pace. Patients who get admitted are a lot sicker; there are more of them; they stay in the hospital for a shorter time; they require more procedures; and the technologies involved in their care are infinitely more complex than anything we had to deal with. And yet, the structure of residency training has changed hardly at all — even with the long overdue restrictions on duty hours. Is it any wonder that the service demands being placed on residents today -- and the high stress levels they experience as a consequence — have led many to wonder just what's driving the show? Is it the residents' need for an education or is it their faculty's need for a helping hand?

There's more at stake here than a philosophical debate. We've already seen too many examples of how the perception of residents as employees has threatened to undermine the core purpose of graduate medical education (GME) as well as the critical role of program faculty. We may not agree with that perception, but it is real.

In 1999, the National Labor Relations Board reviewed residents' "working conditions" and reversed its earlier finding that residents were primarily students. As a result, housestaff in private institutions can now join labor unions. The Jung litigation, alleging an antitrust conspiracy involving the Match, was premised in part on the theory that a resident is simply another kind of "employee." The IRS has recently ruled that residents' stipends are subject to FICA payments like any other "wages." And Rep. John Conyers, Jr. (D-Mich.) and Sen. Jon Corzine (D-N.J.) have filed bills in Congress that would legislate the "work hours" of residents.

More worrisome still: if residents continue to perceive themselves solely as employees, a perception fostered by their large service demands, the predictable consequences are increased cynicism and an undermining of professionalism. Unless we do something to halt this slide down the slippery slope from teacher/learner to employer/employee, not only will our residents fail to receive an optimal education, but our claim to be deserving of public trust will also be compromised.

Which brings me back to my New Year's resolution. In an effort to put a halt to the slide down that slope, I have resolved to promote a new compact between residents in training and their teachers. I have just finished a draft version of the compact and will distribute it widely for comment and revision. It is based on three core tenets of residency training:

- excellence in medical education
- highest quality and safe patient care
- respect for residents' well-being

The compact lays out a set of specific commitments for faculty and a complementary set of commitments for residents, all targeted at maintaining the fundamental focus of GME on education and professional development.

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Once the compact has been vetted and modified as needed, I intend to solicit the endorsement of all of the stakeholder organizations concerned about graduate medical education. After that, it will be up to institutional sponsors of GME and individual program faculty to consider adapting the compact for local use as an affirmation of their and their residents' responsibilities as members of a learning community.

My hope for the New Year is that this compact will not only help resolve the student/employee debate but will also remind residents and their teachers that their interaction with one another is the medium through which the profession inculcates its ethical values.

Jordan J. Cohen, M.D.
AAMC President

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA,

          Plaintiff,

v.

DETROIT MEDICAL CENTER,

          Defendant.

_____/

CIVIL ACTION NO. 05-71722

HONORABLE ARTHUR J. TARNOW
UNITED STATES DISTRICT JUDGE

MAGISTRATE JUDGE
WALLACE CAPEL

ORDER GRANTING PLAINTIFF'S MOTION
FOR SUMMARY JUDGMENT [D/E # 16]

The United States seeks the repayment of erroneous social security tax

refunds for the years 1999 through 2001 that it reimbursed to the Detroit Medical

Center ("DMC"), an organization that operates seven hospitals in the Detroit

Metropolitan area. The DMC has since filed a counterclaim seeking social security

tax refunds for the years 1995, 1996, 1997, 2002 and 2003.

The DMC in conjunction with Wayne State University ("WSU") sponsors a

graduate medical education program ("GME") that provides DMC hospitals with

resident physicians ("residents") in approximately 70 areas of medicine. Each

resident is required to have graduated from medical school earning a M.D. or D.O.

degree. Prior to joining the residency program at the DMC, residents are required

to sign a Residency Agreement that sets forth the duties and responsibilities of

each party. As part of their responsibilities, residents are required to provide

(c) Limitation.
(1) In general. Except as provided in paragraph (2), subsections (a)
and (d) shall not apply to that portion of any amount received which
represents payment for teaching, research, or other services by the
student required as a condition for receiving the qualified scholarship
or qualified tuition reduction.

The DMC contends that the stipends given to its medical residents should

not be considered "wages," pursuant to 26 U.S.C. § 3121(a), but instead FICA

exempt scholarships.

The Sixth Circuit first encountered the question whether monies paid to a

medical resident are wages in *St. Luke's Hosp. Assoc. v. United States.* 333 F.2d

157, 160 (6th Cir. 1964). The Sixth Circuit affirmed the district court's holding

that sums paid to residents were wages because they were in return for the

performance of "very valuable services," *i.e.* patient care. *Id.* at 160.

Soon thereafter, the Supreme Court first interpreted § 117 and what

constitutes qualified income tax exempt "scholarships" in *Bingler v. Johnson.* 394

U.S. 741, 742 (1969). Recognizing that Congress "never defined what it meant"

by the terms "scholarships" or "fellowships" in the statutes, the Court turned its

attention to the Commissioner's contemporaneous constructions of the omitted

definitions in the form of the Treas. Reg. § 1.117-3(a-c) and § 1.117-4(c). *Id.* at

749-51. The Court determined the definition of "scholarships" supplied by the

regulations comported with the ordinary understanding of the term, "as relatively

disinterested, 'no strings' education grants, with no requirement of any substantial

The DMC argues that this court must follow the reasoning of *Bingler* by conducting a "facts and circumstances" analysis to determine whether the residents' stipends qualify as scholarships as opposed to wages. *See generally, Bingler*. 394 U.S. 741 (1969). In hopes of characterizing the residents' role as one where "the primary purpose of the studies or research is to further the education and training of the recipient in his individual capacity" as defined by Treas. Reg. 1.117-4(c)(2), the Defendant paints the picture of a resident's life as one involved in the pursuit of study, as opposed to that of an employee at work. DMC relies upon certain facts to show that the stipends are educational in nature: 1) the institution's primary purpose is to be a teaching institution; 2) the existence of full-time faculty; 3) the absence of any requirement for the residents to remain at the hospital following their residencies; 4) the close supervision of residents by faculty members; and 5) the fact that the medical center does not bill for activities of residents.

In making this argument, the DMC focuses its attention to the first part of the Treas. Reg. § 117-4(c)(2), that the program be educational in nature. Even if true, DMC fails to adequately address the second part of the regulation's requirement, "**and** the amount provided by the grantor for such purpose does not represent compensation or payment for the services" rendered. *Id.(emphasis added)*. The DMC's claim that the residents' stipends are "scholarships" fails because the residents' stipends are given as a substantial *quid pro quo* for patient

●   ●

care, as defined by provision of IRC § 117(c), the Treasury Regulations, *St. Luke's Hosp.*, *Bingler*, and its progeny. It is uncontroverted that in order to receive stipends, DMC's residents are contractually required to perform valuable patient care services. This is exactly the sort of *quid pro quo* that the Supreme Court in *Bingler* relied on in making its decision. The stipends are not "relatively disinterested, 'no strings' education grants, with no requirement of any substantial *quid pro quo* from the recipients." *Bingler*, 394 U.S. at 751. The residents' *quid* consists in the form of patient care services that are exchanged for the relatively little *quo* in the form of a stipend. The DMC not only receives the benefit of the residents' valuable services for a small amount, it now asks this Court to exempt it from having to pay the required FICA taxes.

DMC next argues that a "fact and circumstances" analysis should be employed to determine the proportion of a resident's stipend that is for services rendered and the portion that is for scholarship. Defendant relies on IRS notice 87-31 which notes that a stipend may qualify in part for exclusion from FICA even when a grant does not meet the qualified scholarship exemption. The portion that does not represent compensation for services provided by the recipient should be exempt from FICA contributions.

Yet, the residents' stipends are an all or nothing proposition. As a condition to receipt of the stipends, the residents are required to perform patient care services. Thus, the entire stipend does not qualify in whole or in part for exclusion

from FICA because receipt of the stipend depends on a resident's health care services. Moreover, although there is an educational component involved in a residents' situation, it is through their patient care that the educational component is achieved. The DMC's attempt to redefine the word "work," by arguing that the residents do not "work" at all, is not persuasive. If this were the case then any on the job training or apprenticeship, if it were conducted under the supervision of a college or university, may qualify for FICA exemption.

This court also notes, though does not rely upon for its decision, that both legislative history and the wider goals of expansive Social Security Act protection also weigh against DMC's arguments. ·

DMC's final argument that the true "grantor" of the stipends is the government, not the DMC, is erroneous. The DMC, not the government, signs the checks to the residents for the services they provide.

B.   The Student Exception

1.   Introduction

The DMC argues that it is also entitled to FICA tax relief based on the interpretation of the Internal Revenue Code's student exception listed at 26 U.S.C. § 3121(b)(10). Under the tax code, "wages" received by individuals "with respect to employment" are taxed at 6.2% for Social Security and 1.45% for Medicare. IRC § 3101(a) and(b). Employers, such as the DMC, pay an identical excise tax on those same wages. IRC § 3111(a) and (b). The tax code defines employment as

unlike the present situation here, where the Treasury Regulation unambiguously answers the question left unanswered by the statute, the "amount of remuneration" is "immaterial." § 31.3121(b)(10)-2.

Unlike the Eighth Circuit in *Apfel* and those the district courts that adopted its reasoning, this Court finds that the applicable Treasury Regulation's interpretation of § 3121(b)(10) also fails to directly answer whether medical residents may qualify under student exception. Despite its unambiguousness as to the amount of remuneration, Treas. Reg. § 31.3121(b)(10)-2(d) fails to definitively answer whether a GME program may fall under the commonly or generally accepted meaning of the term "school, college or university." Although GME programs provide a type of education to their residents, they are educational in a way similar to an apprenticeship or a position that involves on the job training. If anything, this Court believes that it is generally accepted that GME programs are not generally considered "schools, colleges or universities," no matter what organization places its name on the program. The DMC, as well as other district courts, refer to GME programs as schools, colleges or universities. However, GME programs are more properly categorized as organizations that happen to be associated with schools, colleges or universities.

Moreover, this Court finds the statute as interpreted by Treas. Reg. § 31.3121(b)(10)-2(c) to be ambiguous in determining whether medical residents may be considered students under the statute based on their relationship to GME programs. Under the Regulation, if "an employee... performs services in the

employ of the organization as incident to and for the purposes of study at such school, college or university has the status of a student." *Id.* The Regulation itself provides little guidance since the Regulation has similar language to the ambiguous statute. This statute as interpreted by this section of the Treas. Reg. is ambiguous as it relates to medical residents since it is unclear whether a medical residents' extensive amount of work involved at the hospitals may be considered "incident to" or "for the purposes of study." It is more likely that a medical resident's study is incident to and for the purposes of work.

Because this Court finds the Treasury Regulations to be ambiguous as to whether a GME program may be considered a school, college or university and whether medical residents may qualify for student status under the exception, a review of the statutory and legislative history is appropriate.

4.   Statutory and Legislative History

Similar to the district court in *Mt. Sinai*, this Court accepts the Government's interpretation of the history of the Social Security Act and their position that medical residents have traditionally been subject to social security taxation. 353 F.Supp.2d at 1223. The DMC argues that it is improper to the extrinsic evidence since Supreme Court has recently rejected legislative history analysis, stating "as we have repeatedly held, the authoritative statement is statutory text, not the legislative history or any other extrinsic material." *Exxon Mobil Corp. v. Allapattah Services*, 125 S.Ct. 2611, 2626 (2005). However, the Supreme Court stated immediately in the same opinion that "[e]xtrinsic materials have a role in

ACGME

Accreditation Council for Graduate Medical Education

2004–2005 Annual Report

MESSAGE FROM THE CHAIR
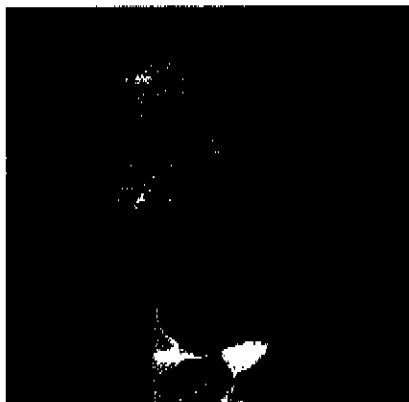
Several reports during the past 10 years have highlighted concerns with the health care delivery system in our country and, in particular, with the preparation of physicians for modern clinical practice. These reports have challenged the medical education community to formulate initiatives to address ongoing concerns.

In response, the ACGME, in close collaboration with its member organizations, has been at the forefront of efforts to address challenges related to graduate medical education, especially in the areas of quality and safety. We have collaborated with the American Board of Medical Specialties in establishing the Outcome Project and introducing the six general competencies, which are shaping GME curricula, as well as new approaches to certification. And our new duty hour requirements have capped on-call and continuous duty periods, thus ensuring that residents and fellows have sufficient time for sleep and rest.

We are, of course, far from alone in our efforts to improve medical education, and, ultimately, patient care. To mention only some of our member organization initiatives, the ABMS, in addition to its continuing collaboration with us on the Outcome Project, has been developing Maintenance of Certification; the Council of Medical Specialty Societies is leading a major initiative to assess and redesign continuing medical education; the Association of American Medical Colleges has established two institutes, one for the Improvement of Medical Education and another for the Improvement of Clinical Care; and the American Medical Association has announced its Initiative to Transform Medical Education.

During 2004–2005, the ACGME continued to work on refining and deepening our understanding of the competencies. The Outcome Project, now completing its second phase, has already shifted the focus of accreditation from processes to outcomes. We sponsored conferences with the Institute for Health Care Improvement and the ABMS, focusing on specific competencies and on assessment and implementation issues.

Our duty hour requirements have been universally implemented throughout the GME community. Recognizing the complexities in this area -- including new challenges created by the duty hour requirements, however, and the fact that multiple issues beyond duty hours impact on patient and resident safety -- the Board during the past year established a Committee on Innovation in the Learning Environment. The committee has been charged to explore ways to enhance the learning environment through innovation and redesign of the clinical education interface; to suggest ways for the ACGME to collaborate with other organizations in assessing the implications of the duty hour limits for the learning environment; and to periodically report to the ACGME on the learning environment, innovations in the learning environment, and ACGME's and the education community's efforts to improve it. This committee, which has been chartered for five years, is chaired by Dr. Jim Howard, Board Vice Chair. Staff leadership is provided by Dr. Jeanne Heard, Director of Accreditation Committees, and Ms. Ingrid Philibert, Director of Field Activities.

After many years of distinguished work in ensuring institutional compliance with ACGME institutional requirements, the Institutional Review Committee was fully empowered during the past year to accredit institutions as providers of GME. In view of this milestone, it was perhaps especially fitting that the 2005 Gienapp Award went to Dr. Ronald Berggren, who has provided outstanding leadership to the IRC in recent years.

This was the fourth year for the ACGME's Parker J. Palmer Courage to Teach Awards, and the Board was again overwhelmed by the excellence of the nominees. It was truly a privilege for me to attend this year's retreat for the award recipients at the Fetzer Institute and to meet award recipients from this and prior years. The retreat provided a unique opportunity for reflection and fellowship, and I want to recognize the fine contributions of Dr. Paul Batalden and Dr. David Leach in planning the retreat program; and thank the Fetzer Institute for their continuing and generous sponsorship of the retreat. I am also especially pleased that the Board last year approved a new Courage to Lead Award, which will permit us, starting in 2006, to recognize DIOs as well as program directors for their leadership and contributions to graduate medical education.

While endeavoring to successfully accomplish our mission, both the ACGME Board and staff recognize the need for continuing input from each other, our members and all our constituents. In that spirit, we embarked on an extensive self-assessment study, the results of which are catalyzing a re-examination and re-formulation of our mission, vision and values; and the identification of strategic priorities, to include a dashboard of strategic indicators which will permit the Board and the executive director to assess the ACGME's performance in an ongoing manner. Our current quality and safety initiatives, though invaluable, have contributed to an increase in documentation requirements. These have added to the administrative burden of program directors and DIOs, and may even interfere at times with their ability to spend time with their trainees in addressing clinical and other professional development issues. The Board is working closely with both the Council of Review Committee Chairs and the ACGME staff in addressing this area, and we are encouraging review committees to consolidate, streamline and reduce documentation requirements, to the maximum extent consistent with ensuring and maintaining high quality academic programs. Pilot accreditation programs developed by several RCs, most recently internal medicine, and automated electronic reporting formats, such as EveAdam – developed by Mr. John Nylen, chief operations officer, and his staff at the ACGME – are all important contributions towards that goal.

In closing, I would like to thank the entire ACGME staff for their professionalism and dedication; and Dr. Leach for the leadership that he continues to provide not only for ACGME, but for graduate medical education nationally. I am grateful to my fellow Board members for their selfless service, guidance and support. I want to particularly thank the Chair of the Council of Review Committee Chairs, Dr. David Osguthorpe, for his outstanding work in coordinating review committee, board and staff efforts and initiatives. Most of all, I must recognize our review committee members for the many hours of dedicated volunteer work that make the the ACGME's mission possible. On behalf of the Board, our sincere and profound thanks!

Emmanuel G. Cassimatis, MD
Chair
Accreditation Council for Graduate Medical Education
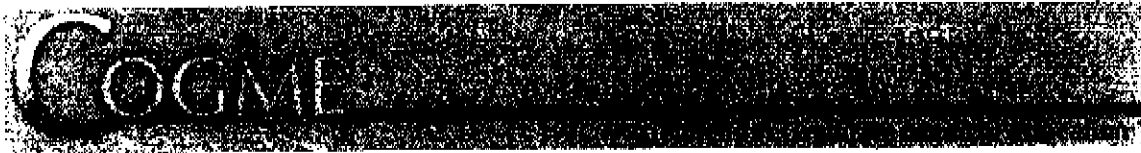
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Summary of Fifteenth Report

Financing Graduate Medical Education in a Changing Health Care Environment

December 2000

The full version of this report is available in PDF format *(467 KB)*

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Executive Summary

This report, Financing Graduate Medical Education in a Changing Health Care Environment, reviews current funding mechanisms for graduate medical education (GME) and recommends actions that should be taken to respond to the changing health care environment. Care is increasingly provided within the context of managed systems of care that require clinical learning experiences across the continuum of care. The current system of financing GME has inherent limitations and disincentives for expanding training in community-based sites. Stable all-payer financing is needed that will provide adequate support for training in community settings.

OVERVIEW

As used in this report, GME is clinical training in an approved residency program following graduation from schools of medicine, osteopathy, dentistry and podiatry. The training is required for certification in a specialty and is approved by a non-governmental accrediting organization for the specialty. The residency program varies in length depending on the specialty. Most residency programs are sponsored by a hospital, medical school, or educational consortium. There are about 100,000 residents in 8,000 different residency programs. The residents, who are serving a form of apprenticeship, provide patient care under the supervision of a teaching physician. Teaching hospitals serve as the primary training sites for most residency programs. Training occurs in both the inpatient setting and in the ambulatory-clinics of the teaching hospital. In addition, community hospitals and other community-based sites provide training opportunities.

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Financing Graduate Medical Education in a Changing Health Care Environment
Continued

HEALTH CARE PROVIDER MODEL

The health care provider model links payments for clinical training to patient care activities. This is the approach Medicare uses. It treats clinical training costs as patient care costs as opposed to educational costs. It is the most appropriate model for the indirect costs of clinical training since these costs reflect the impact of the teaching activity on the patient care costs of the site where the training takes place. The health care provider model provides no support for training that does not occur in patient care settings. Residency programs in preventive medicine would typically receive little funding through this model.

There are several options regarding which entity should receive direct GME payments for training in community-based settings:

- Consistent with Medicare's current rules, payment could flow to the hospital or the community training site depending on which entity bears substantially all the training costs for the resident's time at the site, i.e. pays the resident's salary and reasonable compensation for teaching.

- An alternative would be for funding to follow the resident to the community site regardless of which entity bears the cost.

- Another option would be to pay pro rata amounts to the hospitals and the community-based ambulatory sites participating in the residency program based on their relative shares of GME program costs. One approach would require the affiliated hospitals and community-based training sites to agree on their relative shares of program costs. A variation would be to designate a fixed percentage of the payment to hospitals for training in community settings.

EDUCATION MODEL

The education model treats direct GME costs as an educational cost

Chapter 1

Association for
Hospital Medical Education

The Philosophy of GME:
Practical Wisdom and the Formation of Physicians
by David C. Leach

INTRODUCTION

A few months before his death William Stafford, a poet from Kansas, wrote a poem entitled: *The Way it Is*.[1]

There's a thread you follow. It goes among
things that change. But it doesn't change.
People wonder about what you are pursuing.
You have to explain about the thread.
But it is hard for others to see.
While you hold it you can't get lost.
Tragedies happen; people get hurt
or die; and you suffer and get old.
Nothing you do can stop time's unfolding.
You don't ever let go of the thread.

It is good to clarify something we have all thought about much of our professional lives: competence. Using the lens of competence enables us to see both the practical and the philosophical aspects of our work; it gives us an anchor and a sail. It forces us to identify the "thread" we hang onto as we change to accommodate new realities.

In 1997, the Accreditation Council for Graduate Medical Education (ACGME) decided to use educational outcome measures as an accreditation tool. Six general competencies were identified,[2] competencies that would be expected of all residents independent of specialty. In 1999, the American Board of Medical Specialties (ABMS) agreed to adopt the same six competencies. Hence, not only would these competencies be taught, but they would be tested in the certification exams. Further, ABMS developed a maintenance of certification program that ensures that these competencies be tested periodically until retirement. This chapter discusses the practical and philosophical lessons learned to date from the ACGME initiative, lessons about competence, and also lessons about character development in physicians and the communities that support physician formation. An underlying premise emerges that much of the work of medicine involves improvisation; and improvisation engages both rules and values; physician formation must pay attention to both.

In their book, *Good Work*, Gardner, Csikszentmihalyi, and Damon ask the question: 'Why is it that experts primarily teach techniques to young professionals, while ignoring the values that have sustained the quests of so many creative geniuses.'[3] Their observation prompts a call to pay attention to

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both the rules and values of medicine in physician formation. Residency is a time when he "rules" meet the realities of particular patients and settings; adaptation to the particular exposes values. Our experience suggests that Dee Hock's adage "substance is enduring; form is ephemeral. Preserve substance; modify form; know the difference"[4] could be modified to read: Values are enduring; rules are ephemeral. Preserve values; modify rules; know the difference.

LESSONS ABOUT COMPETENCY LEARNED TO DATE

The overriding lesson learned by the AGME Competency Initiative is that assessing competence is hard work, and yet it can be immensely satisfying. At the beginning of this initiative, the turnover rate for all residency program directors averaged about 30% annually; it is now 13.9%.[5] One might infer that happiness reigns; a more accurate inference is likely to be that the work of a program director is now so substantive that institutions cannot afford to have them leave. The work of education is real work.

Taking competency seriously clarifies the following lessons:

A. Competence is a Habit

The medical educational system that emerged in the last century was designed to distinguish the qualified from the quacks. It was heavily process oriented, asking questions such as: did you graduate from an accredited medical school and from an accredited residency, and are you board certified? The system was designed to determine the potential of the physician to function competently. The emerging model is more robust. It asks, "have you demonstrated the habit of reflective practice, do you perform competently on a daily basis, and can society count on you to perform competently?" The new model depends on multiple assessment tools applied over time to discern habits organized around six domains (patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice); the old model used mostly multiple choice questions focused mainly on medical knowledge.

Habits can only be discerned in relationship over time. They are not one time events. Education, like patient care, is a cooperative art. Paulo Freire, the Brazilian educationalist has said, "Teaching makes the organic inorganic."[6] Traditional classroom curricular-based education reduces the complex to easily digested packets of coherence. This model by itself is inadequate to the task of teaching both rules and values; further, it diminishes the uniqueness of both the doctor and the patient. It has a role but more robust models must also be deployed. Most residents will readily admit that they learn more from conversations with peers and more experienced practitioners -- this is called dialogical education. Further, they learn a great deal from doing (praxis i.e., action that is informed by certain rules and values. They also learn from the community in which they are being formed. The community offers both overt and hidden curricula -- do what I say and do (or don't do) what I do. Because formation occurs in community and is relational, the quality of life for residents (as well as patients and ourselves) is directly related to the quality of the conversations in our lives. If you want a quick biopsy of how things are going, examine the conversations in your life and in your academic medical center. How is it going?

B. The Important Things are Hard to Measure

Dee Hock has said that the following criteria should be used in hiring people: integrity, motivation, capacity, understanding, knowledge, and experience.[4] He further says that the criteria must be used in that order. Why? If I lack integrity and am highly motivated, I can get the organization in big trouble. If I am brilliant but lack motivation, nothing much is going to happen. If I lack capacity, my understanding and knowledge are limited, and my experience may be blind. Yet there is an inverse relationship between the importance of the criterion and the ease with which it is measured. It is relatively easy to measure experience and very difficult to measure integrity. When assessing competence of physicians these same difficulties apply. Habitual performance at a high level depends on integrity,

motivation, and capacity. With these three, the others come. It is easy to assess medical knowledge; much harder to assess the top three attributes. Simple multiple choice exams are not up to the task. Multiple assessments (direct observation of the resident's performance; 360 degree evaluations from nurses, patients, peers and others; accumulated portfolios of experiences; standardized patients; and simulated encounters) all done over time to document growth are needed.

C. Competence Proceeds Along a Continuum

The alternative to competent is not always incompetent. It is helpful to review the work of Hubert and Stuart Dreyfus who have described a continuum of skill acquisition that proceeds from novice to master.[7] In their model becoming competent involves learning rules and applying those rules in ever more complex contexts. The task of the novice and the advanced beginner (medical school and early residency) is to learn the rules. As learners proceed through residency they apply those rules in various situations and are progressively more informed by context (patients) as well as rules. Life after competence is characterized by a deep dependence on context, on the needs of a particular patient. Proficient physicians almost intuitively recognize patterns of disease and can see what is going on with patients very quickly. Experts not only see what is wrong, but what to do about it in a given case. They are frequently called upon by colleagues as a recognized and efficient source of wisdom. True masters are rare. They have integrated their experience with rules and with contexts into their own particular style. Paul Batalden has said, "Masters enjoy surprise, whereas experts hate them" (P. Batalden, oral communication, 1998).

Hubert Dreyfus has said, "To become competent you have to feel bad" (H. Dreyfus, oral communication, 2001). This is both true and is at the heart of residency education. As learners shift from rule-based to context-based behaviors they must pick a point of view from which to see the case. An example helps illustrate this point. The task of the third-year medical student (novice) is simply to gather all of the information about a patient; the task of a resident (advanced beginner to competent) is to determine which information is relevant and which is less relevant. A third-year student may have all day to interview and examine a patient; a resident likely has several admissions and severe time constraints. Residents formulate hypotheses about what is going on, and in doing so they may make a mistake. They may think it likely that shortness of breath in a particular patient is due to pneumonia when in fact it is due to a pneumothorax. The patient may suffer if they get it wrong. Dreyfus would say that at that point two paths are open -- a shift back to rule-based behavior (shortness of breath on Tuesdays is due to a pneumothorax) or a shift into a deeper understanding of particular context (what about this patient could have told me this was a pneumothorax). The first path leads away from competence and recycles the learner back to advanced beginner, and the second moves the learner toward competence. However, the second path is painful. It involves clarifying conversations with the patient and with colleagues that both acknowledge error and admit ignorance. The task of the faculty and program director is to ensure that the resident moves forward. It frequently requires ensuring the right amount of "feeling bad." If a resident has made an error and does not feel bad, s/he should be encouraged to do so. If, as is more likely, the resident feels crushingly bad and is paralyzed by guilt, the program director's task is to help him/her keep perspective. Just the right amount of "feeling bad" is needed.

D. Knowing the Rules is not Enough. Residents Need to Prepare for the Unknown; How They Think is as Important, and Perhaps More Important than What They Think.

Some of medicine is certain. There is widespread agreement about and evidence for some interventions: treatment for myocardial infarctions; antibiotic prophylaxis for certain surgeries ventilator bundles; central line catheter management, etc. Residents need to acquire and apply this knowledge. Yet much of the work of medicine lacks this degree of certainty and agreement. Sometimes virtually nothing is known, at other times something is known but consensus is lacking. Residents have to function in these domains as well. How they think becomes important.

Usha Satish[8] has studied how residents think. She has used a computer-based simulation that is in no way dependent on medical knowledge. Residents are asked to manage a complex municipality as it encounters several catastrophes. Remarkably residents in different specialties approach the problem differently. Some anticipate needed information and seek it out early; others wait until something happens. Some are exhausted by emergencies; others resume baseline functioning immediately. It is of interest that in a given specialty residents do not change how they think. Surgeons, psychiatrists, and emergency medicine physicians all learn an incredible amount during residency (i.e., the 'what they think' increases) but the 'how they think' does not change. This presents a major opportunity. Her early work with corporate CEOs suggests that the best CEOs have multiple ways of thinking at their immediate disposal.

E. Phronesis

While knowledge and skill are prerequisite, the real value physicians offer society comes from their capacity to make good clinical judgments. Residents seek practical wisdom. This is not a new idea. Aristotle (whose father was a physician) described three virtues of knowing: episteme (cognitive knowledge, science); techne (the craft of medicine); and phronesis (practical wisdom or prudence).[9] I asked John Kostis, a chair of medicine in New Jersey who speaks Greek what this word "phronesis" means. He replied, "Knowing exactly which rule to break, and exactly how far to break it to accommodate the reality before you" (J. Kostis, oral communication, 2001). It is a formal act of prudence – an act that does not break all the rules, nor even this rule all the way, but one that is biased toward reality. Abandoning rules is sometimes necessary and a very responsible way to accommodate reality. This is at the heart of good medicine, and is an integral part of physician formation.

CHARACTER AND COMMUNITY

As our knowledge of competence has increased, it has become evident that the formation of physicians is a form of character development. As Robert Pirsig wrote in *Zen and the Art of Motorcycle Maintenance*, "Quality [read competence] isn't something you lay on top of subjects and objects like tinsel on a Christmas tree . . . it comes from the cone from which the tree must start."[10] Further, the organizational models of academic medicine are important. To paraphrase Aristotle: character is determined by community; and community is determined by character. We are the products of our communities, family, school, and the other communities of childhood. Now in turn we contribute to our communities in ways that shape and define their quality. Resident physicians bring a set a values to the institution in which they are trained. They are in turn shaped (formed) by that institution. Like a set of matryoshka nesting dolls the individual resident is embedded in an institution, a profession, and a society that all influence and shape his or her formation. As we go into the future, clarity about these interrelationships will be helpful.

Resident formation can be thought of as a journey to authenticity. Individual values (that which Karl Jaspers[11] might call the 'unconditional imperative' that command of my authentic self to my mere empirical self) meet professional values (thought of as shared assumptions that provide a foundation for action). Yet, it is an inside out journey rather than one of accretion. It is a journey of discovery. Marcel Proust said, "We don't receive wisdom; we must discover it for ourselves after a journey that no one can take for us or spare us."[12]

The inner journey begins by clarifying true self from false self. It is common to assume a persona and to wear it like a suit of clothes. Most evident in adolescence this phenomenon also occurs in physician formation. I develop fluency with the external world by exposing only those parts of myself that are safe, and that are not too unique. I protect my inner self. We are taught to not wear our heart on our sleeve, and yet the work of medicine requires heart. Becoming competent ultimately unveils the true self and calls for the courage to express it.

Having discerned true from false self, the next step in the resident's journey is to invite the whole person to show up for work. Academic medical centers invite our intellects to show up, our

egos frequently show up, but the whole person is unique and may not be invited. What kind of community might invite the whole person to show up?

Frenzy doesn't help, Thomas Merton has written[15]:

> There is a pervasive form of modern violence to which the idealist . . . most easily succumbs: activism and overwork. The rush and pressure of modern life are a form, perhaps the most common form of its innate violence. To allow oneself to be carried away by a multitude of conflicting concerns, to surrender to too many demands, to commit oneself to too many projects, to want to help everyone in everything is to succumb to violence. The frenzy of the activist neutralizes his (or her) work . . . It destroys the fruitfulness of his (or her) work because it kills the root of inner wisdom which makes the work fruitful.

This sounds like an academic medical center to me.

Those foolish enough to do this work (preparing residents for the future) find that it is best to work with rather than against nature. Humans come equipped with three faculties that can be recognized and shaped: the intellect which seeks truth; the will which seeks goodness; and the imagination which seeks beauty. These faculties are related to the work of medicine. The intellect can discern the truth; the will can be used to make good clinical judgments; and the imagination can be used to inform those judgments with harmony, creativity, and beauty. Explicit values can be identified based on these faculties: integrity (discerning and telling the truth); altruism (putting what is good for the patient ahead of what is good for the doctor); and practical wisdom or prudence (beauty in clinical judgment). Further, Aristotle offers a fourth value – arête – integrating all of these virtues into excellence. The quality of patient care and the quality of professional formation are inextricably linked. They cannot be separated. We could do worse than to arm ourselves with these values as we go into the new world.

We need values for another reason. We exist in a postmodern world, a world that carries with it a set of cultural assumptions that reality cannot be known with certainty, that reality is nothing more than a social construct, that perception is reality. The analogy for this world is the spin doctor – a new species that asks 'what would you like this to look like?' As Flannery O'Connor has said, 'Those who have no absolute values cannot let the relative remain merely relative; they are always raising it to the level of the absolute."[14] A postmodernist world fosters fundamentalism.

Medicine offers an alternative. The daily work of medicine assumes that reality does exist and that it can be known although with difficulty. The real doctor can replace the spin doctor. Reality can once again guide our behavior. I may or may not have a gallstone. A doctor's opinion about my having a gallstone does not cause the gallstone – it is not a social construct. It either is or is not present and he either did or did not get the right diagnosis. Doctors live this everyday. It is called critical realism. As we and the larger society move forward, the profession offers a corrective to postmodernism – we should help preserve reality as more than a simple social construct.

Doctors improvise when encountering an individual patient; they bring values as well as rules to their judgments; they break rules prudently; their character is important as are the knowledge and skill; good medical care requires that the whole person show up. Likewise, as the profession encounters an unknown future, it will improvise. It will depend on values and rules. The profession itself has character and that will be shaped by emerging realities. Communities help. Good conversations about values are needed. Our formation as individuals and as a profession is never complete. We are all pilgrims on the way and oriented toward fulfillment, but we need community for clarity and need clarity for courage it will take to adapt to the new world. "To teach is to create a space in which obedience to truth is practiced."[15] This saying of Abba Felix, as quoted by Palmer, may be modified to read "to teach or learn is to create a space or a community in which obedience to truth is practiced. That is the work ahead of us.

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Money and Manpower in Graduate Medical Education

David C. Leach, MD*

The United States spends approximately $425 billion on health care annually (1). The direct cost of graduate medical education is estimated to be $3 billion (2), which includes salaries and benefits for housestaff, faculty teaching time, medical libraries, and other overhead associated with housestaff. Given that $3 billion is a substantial amount of money, graduate medical education has received an inordinate amount of attention in recent months, and its funding has been challenged by a variety of payors (3,4). The reasons for this extend beyond the direct cost of graduate medical education and include issues of physician manpower (are we training too many specialists?) and the established observation that teaching hospitals are costlier places to do business than nonteaching hospitals.

This article will make four points. First, only a fraction of the additional costs of operating a teaching hospital is attributable to teaching, and elimination of teaching programs will not eliminate those costs. Second, the accrediting bodies charged with defining the uniform requirements of specialty certification are completely dissociated from the funding mechanisms supporting those educational programs. This results in hospitals being required to do more with fewer resources. Third, politicizing the graduate medical education process is hazardous because it generates an urgency for short-term solutions which in the long run may prove to be both costly and detrimental to the alleviation of human suffering. Fourth, the manpower issues bantered about by politicians and physicians alike may actually be pseudo-issues. A physician surplus will exist when one position in any US medical school goes unfilled for lack of interest. Any other definition is either politically or financially motivated.

The Cost of Teaching Hospitals

In 1983 the Commonwealth Fund convened a task force that examined the financing of graduate medical education (2). A comparison of the operating costs of 115 major teaching hospitals with those of 4,736 nonteaching hospitals disclosed that teaching hospitals are much more costly places to do business. The cost per discharged patient in nonteaching versus teaching hospitals was $1,865 versus $4,221, a $2,356 difference. Only $637 or 27% of this difference was due to the direct and indirect costs of education; $1,719 or 73% of the difference was due to other factors such as the cost of an urban location, higher wages, severity of illness, complexity of illness, need for technological support, larger percentage of indigent care and poor payors (such as Medicaid), and greater social severity (destitute people stay in hospitals longer because they have no place else to go). These factors, which legitimately increase costs in teaching hospitals, traditionally have been recognized by most payors. In the days of cost-reimbursement, these costs were considered part of the general cost of doing business. However, with the adoption of the principal of prospective payment for diagnosis related groups (DRGs), Medicare reimbursed these costs in a much less precise way through a vehicle known as the indirect teaching allowance. Under this DRG system, Medicare reimburses the hospital for its direct educational expenses in proportion to the percentage of its patients supported by Medicare. Moreover, each DRG payment is increased by a percentage figure which is calculated from the number of residents and the number of beds. In a large hospital with a large teaching program, the enhance-

> "A physician surplus will exist when one position in any US medical school goes unfilled for lack of interest."

ment approximated 50% in 1985. In other words, if a given DRG warranted payment of $2,000, a large teaching hospital will receive $3,000. This is known as the indirect teaching allowance, although all parties acknowledge that it has nothing to do with teaching. It is a means to reimburse teaching hospitals for the ill-defined but additional cost of doing business in an urban location, which requires higher wages for employees and caring for more complexly ill patients. Moreover, it is designed to cross-subsidize the care of indigent patients. Having established this principle, the federal government adopted the Consolidated Omnibus Reconciliation Act (COBRA) of 1986, and began to ratchet down the indirect teaching allowance. Continuing to employ the resident-to-bed ratio, the constant multiplier of 11.59% has been reduced to 8.1%. Hospitals with more than 15% Medicaid patients as their clientele may receive a bonus payment intended to compensate for the reduction of indirect teaching reimbursements. However, the important factors such as severity and complexity of illness, higher wages, social severity, urban location, and need for technological support have not been addressed.

Under this system of reimbursement, hospitals have had an incentive to maintain large teaching programs. This will not be true for long, however. In addition to reducing the indirect reimbursements, the COBRA legislation gives authority to the Health Care Finance Administration (HCFA) to define the cost-per-resident that will be directly reimbursed. Furthermore, other payors are examining educational costs, questioning the appropriateness of reimbursing them. Most health maintenance organizations (HMO's) associated with teaching hospitals introduce a small teaching component into the capitation rate. As these prepayment programs come under the pressure of competition, that component is at risk for reduction and elimination. Ultimately, one can imagine a scenario in which teaching hospitals receive only a fraction of current teaching reimbursements. Their fixed costs, which have nothing to do with teaching and yet are characteristic of a teaching hospital, will remain high.

It is an act of faith to assume that the large urban teaching hospitals now dominating graduate medical education will be preserved despite their inherent inefficiencies. That care for the indigent, the complex, and the urban patient will not be continued is unimaginable, but the mechanism of support remains uncertain at this time. The policy that is adopted must recognize that most of the high costs characteristic of great teaching hospitals have little to do with teaching and that elimination of teaching programs can have little impact on reducing these costs.

"Neither the specialty boards nor the RRC have any input into the funding mechanism for education. At times their decisions will result in significantly increased costs to the hospital when the education reimbursements are declining."

The Dissociation of Accrediting Bodies from the Funding Mechanism

The Accreditation Council for Graduate Medical Education (ACGME), composed of representatives of the American Hospital Association, the Council of Medical Specialty Societies, the American Board of Medical Specialties, the Association of American Medical Colleges, and the American Medical Association, oversees graduate medical education in the United States and issues general statements for the guidelines for residency programs. Their residency review committee (RRC) defines the particular requirements by specialty, the length of the program, and may further indicate the number of residents allowed in each training program. The RRC is composed of representatives of the American Medical Association, relevant specialty boards, and on some occasions specialty societies. Residency review committees have substantial authority. The ACGME and specialty boards may review rules established by the RRC but cannot modify or veto them. Only after completion of an approved training program may a resident sit for a certification examination within his or her specialty. Occasionally,

differences develop between the specialty boards, w... are charged with certifying specialists, and the RRC, who a... prove the training program In such instances the specialty boar... usually prevail.

Neither the specialty boards nor the RRC have any inp... into the funding mechanism for education. At times their d... isions will result in significantly increased costs to the hospi... when the education reimbursements are declining. Example... of this include 1) extending the training period for certificatio... 2) requiring more and more faculty subspecialists to train fu... dents, and 3) increasing the time spent in the ambulatory clin... relative to inpatient time (a recent development in Internal M... edicine training).

Given the seemingly irresistable force of declini... reimbursement and the seemingly immovable object of e... more stringent residency review requirements, what is the li... ly outcome? To survive the residency review process, teachin... instutions must have adequate patient volume, variety of p... hology, available ambulatory facilities in which to teach outpa... nt medicine and surgery, technology sufficient to cover the... pth and breadth of the specialty taught, and commitment by th... institution and faculty to educational objectives independen... of other institutional manpower needs. Institutions with margi... l patient volume for teaching purposes, inferior facilities, or u... commited faculty are not likely to survive the residency re... ew process. It is possible for the collision of the irresistable... orce with the immovable object to create a new entity, a qual... y educational program (as defined by the residency review co... mittees) funded by educational monies from all payors but... cluding completely the indirect cost of teaching. After all... ase costs really address a much larger societal issue: what stand... rd of care for the indigent and the complexly ill do the people of... he United States accept? Unfortunately, the shift to prospecti... payment and DRGs has resulted in the federal government pay... g most of indirect teaching costs which, as stated, have little to... o with the real costs of teaching programs. Private payors an... capitated programs accept proportionately less of the burden... d will undoubtedly continue this practice given the competit... n for subscribers. Accordingly, the fate of teaching hos... tals rests increasingly with an unpredictable political process... ver which they have relatively little control...

Politicizing the Graduate Medic... Education Program is Hazardou...

The COBRA established a council for graduate... dical education whose purpose is to advise the Secretary o... Health and Human Services regarding the supply of physi... ans in the United States, the current and future needs for phys... ians in primary care and the specialties, issues related to for... gn medical graduates, federal policies concerning financial su... ort of medical training and appropriate programs for hospita... and medical schools with respect to the above. This council... to issue its first report to the Secretary and the Congress by... ly 1, 1988, and will report every three years thereafter. The pr... osed membership of 17 includes the Assistant Secretary fo... Health, the Administrator for Health Care Financing Admin... tration; and

ten members appointed by the Secretary from health care providers, national and specialty physician organizations, schools of medicine, organizations for foreign medical graduates, and hospitals that provide graduate medical education. An additional four members are appointed by the Secretary to represent health insurers, business, and labor. The consequences may be profound.

Another attempt on the part of political bodies to regulate physician manpower in the United States was made in the late 1960s and early 1970s. The perceived issue then was "too few doctors" with the contention that the medical profession was in-

> *"Current attempts to reduce physician manpower will not simply retrace steps and restore higher standards. Instead, both the better and inferior medical schools are being asked to reduce their class enrollment."*

tentionally limiting competition to maintain high fees. Accordingly, financial pressure was put on medical schools to increase their enrollment, and several new medical schools were created. The typical class size increased from 70 to frequently over 200, and the number of schools expanded to 127. Rather than reducing health care costs, the explosion in the number of physicians resulting from these maneuvers brought both higher fees per service provided and a great many more services provided. Political bodies perceive a physician manpower surplus that now needs to be reduced. What in fact had happened was an across-the-board lowering of standards for the profession. Medical school applicants who formerly would have been rejected were being accepted, and medical schools that previously could not have met the requirements were being accredited. However, the current attempts to reduce physician manpower will not simply retrace steps and restore higher standards. Instead, both the better and inferior medical schools are being asked to reduce their class enrollment. Very possibly the same scenario will be played at the graduate medical education level as the federal government and other persons establish regulatory bodies charged with reduction of physician surplus as their sole purpose. Currently, each graduate from an ACGME Liaison Committee for Medical Education approved medical school examines available residency programs in his or her discipline and applies to the most attractive one through the National Residency Match Program. Programs most attractive to graduates generally are filled by the most attractive graduates. In microcosm this is a free market system in which issues of salary and fringe benefits play a minor role and quality education programs a major one. Good residents are good business for hospitals. Not only do they provide better patient care but also improve marketing, conduct more cost-effective practice, and contribute to efficient hospital management. Given their constrained resources, hospitals will nonetheless seek to preserve residency programs that are capable of attracting quality residents. On the other hand, if resi-

dency programs are regulated by the government or other payers, inferior programs will almost certainly be supported and the quality programs diluted. Medical school graduates have a much greater incentive and ability to evaluate individual residency programs than would any regulatory agent.

Physician Manpower Issues or Pseudo-Issues

Virtually every article in the lay and professional literature about physician manpower in the United States accepts that there are too many physicians, particularly too many subspecialists. In 1959 there were about 140 physicians per 100,000 population; currently there are 200 physicians per 100,000. It is anticipated that at the turn of the century there will be 220 physicians per 100,000 population. The number of active physicians (MD and DO) in the continental United States was 326,200 in 1970, 467,000 in 1981, and is projected to rise to 594,600 by 1990 and to 706,500 by the year 2000. The Bureau of Health Professions [3] projects that the ratio of primary care physicians to the population will increase from 84 per 100,000 population in 1981 to 115 per 100,000 population in the year 2000. Clearly, the number of doctors is increasing. Less clear is whether a physician surplus exists. One could define a physician surplus as existing only which an available first-year position in any US medical school remains unfilled for lack of interest. That set will not incorporate all of the financial and professional implications of competition and opportunity. Other definitions of physician surplus are at best speculative. Furthermore, these speculations are limited in several ways. For example, any body appointed by a state to examine the problem of physician manpower tends to deal with issues within that state. A council convened by the federal government tends to limit its considerations to our country, yet the United States represents a world resource for medical care. Almost certainly the world needs either more physicians or a more equitable distribution of physicians. What should be the role of the United States in addressing issues of health care in the third world? Consider the hazards of attempting to project manpower needs. How many infectious disease specialists were needed before 1981? Did this change after 1981, the year that AIDS was first described by the Centers for Disease Control? What medical resources will be needed to battle this 20th cen-

> *"Good residents are good business for hospitals. Not only do they provide better patient care but also improve marketing, conduct more cost-effective practice, and contribute to efficient hospital management."*

tury plague? What types of physicians are needed to treat these patients? Although virtually everyone agrees that there are now too many cardiologists, if the intracoronary use of thrombolytic agents should become the standard of care for every myocardial infarction in the United States, will there be a surplus? The free

market alternative to regulation is most attractive. Young physicians can best define what type of physician they want to become, primary versus specialist; and if specialist, what type of specialist? They will incorporate economic and professional realities into their decision. Any regulatory process could impede and almost certainly not improve that mechanism for regulation of physician manpower.

I acknowledge that this article expresses opinions more than facts. My wish is to focus attention on some current issues in graduate medical education. As society, the government, the payors, and the profession scrutinize funding for graduate medical education, they must also address the issues of care for the poor and severely ill. As training programs attempt to do more with less, many fine institutions may decide to get out of the education business completely. History's lessons about the hazards of manpower regulation in medicine should not be ignored.

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Residents' Work Hours:
The Achilles Heel of the Profession?
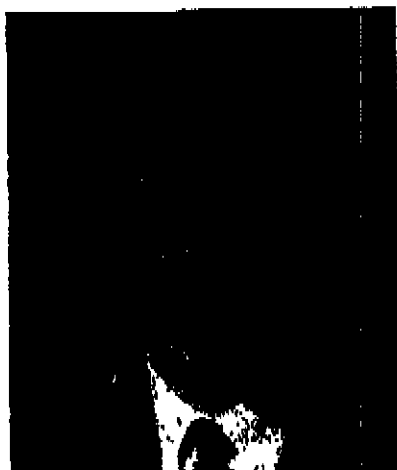
David C. Leach, MD

I have stayed up all night lots of times. I hope and think that I have not made a serious mistake because of it. However, I do know that I felt like a zombie the next day. Every citizen on the globe has probably stayed up all night at some point—they know what it feels like. In assuring them that doctors function well when sleep deprived we are asking them to deny their own experience. It is the Achilles heel of the profession.

> —A distinguished senior surgeon,
> June 27, 2000

The health care system is broken and residents live in the cracks of the broken system. They are the glue that holds it together.

> —PAUL BATALDEN. MD, director, Health Care Improvement Leadership Development, Dartmouth Medical School, summer 1999
>
> —Theme of a plenary session, group on resident affairs, chaired by Gail Warden, president and CEO, Henry Ford Health System, April 2000

These two provocative statements frame the very important issue of residents' work hours. They challenge beliefs that the primary purpose of residency is education, that the type of work performed by residents is appropriate, and that medicine's credibility is enhanced when physicians work long hours without adequate rest.

Institutional and program requirements relevant to residents' work hours developed by the Accreditation Council for Graduate Medical Education (ACGME) and the Residency Review Committees (RRCs) have revealed behaviors that do little to calm the provocation. These requirements reflect the deliberation of thoughtful institutional and specialty physician leaders, all of whom are peers in their specialties and many of whom are program directors themselves. Proposed requirements are broadly circulated for comment and undergo extensive vetting. Because of this process these requirements serve two purposes: as standards against which institutions and programs can be judged and as formal statements of shared values. Each discipline has considered and adopted standards relevant to work hours, and considers those standards to reflect its values. Yet they are being violated on a regular basis. This is disturbing. Any gap between the profession's stated values and its behaviors weakens the profession.

In 1999 the frequencies with which violations of work-hour requirements were cited during program reviews were 30% for internal medicine, 36% for general surgery, 29% for orthopedics, and 21% for pediatrics, to name a few. (The complete list can be found in the April 2000 issue of the ACGME Bulletin on (www.acgme.org).) The sponsoring institution is ultimately responsible for its educational programs and is

charged with enforcement of the ACGME's Institutional Requirements. In 1999 the Institutional Review Committee reviewed 86 sponsoring institutions and cited 17, or 20%, for violations of these work-hour requirements.

The particulars of the Institutional and Program Requirements can also be found on the Web site mentioned above. Two examples are presented here. Internal medicine's reads:

II.A.2.i–k. When averaged over any 4-week rotation or assignment, residents must not spend more than 80 hours per week in patient care duties. Residents must not be assigned on-call in-house duty more often than every third night. When averaged over any 4-week rotation or assignment, residents must have at least 1 day out of 7 free of patient care duties.

In 1999 the Internal Medicine RRC reviewed 92 core programs and cited 28 (30%) as being in violation of these requirements.

General surgery requires the following:

V. R Graduate education in surgery requires a commitment to continuity of patient care. This continuity of care must take precedence—without regard to the time of day, day of the week, number of hours already worked, or on-call schedules. At the same time, patients have a right to expect a healthy, alert, responsible, and responsive physician dedicated to delivering effective and appropriate care. The program director must establish an environment that is optimal both for resident education and for patient care, while ensuring that undue stress and fatigue among residents are avoided. It is his or her responsibility to ensure assignment of appropriate in-hospital duty hours so that residents are not re-

quired to perform excessively difficult or prolonged duties regularly. It is desirable that residents' work schedules be designed so that on average, excluding exceptional patient care needs, residents have at least 1 day out of 7 free of routine responsibilities and be on call in the hospital no more often than every third night.

In 1999 the Surgery RRC reviewed 69 General Surgery programs and cited 25 (36%) as being in violation of these requirements.

These behaviors may reflect a lack of clarity about the purpose of graduate medical education (GME). I would propose that the overriding purpose of GME is to improve patient care. Being clear about the linkage between GME and patient care can do nothing but strengthen both. How do work-hour policies and practices affect patient care?

Teaching hospitals attract very sick patients. These very sick patients require not just daily but frequently minute-to-minute attention by those with the best expertise. Needed are individuals who can both discern changes in the clinical situation and mobilise resources to take appropriate action. GME, properly conducted, provides an almost ideal model for such care. However, when this model is abused both education and patient care are seriously compromised. Types of abuse include abandonment of the resident, exhaustion of either the resident or the faculty, and distraction from the task at hand, sometimes by the need to focus on the system rather than the patient. Each of these forms of abuse can be sporadic or systemic.

When residents are systematically, abandoned, accreditation of the residency program should be withdrawn. The environment is dangerous for both residents and patients, and sponsoring institutions condoning such behavior have failed in their responsibilities. Much more commonly the ACGME encounters supervision that while adequate is not optimal. Competing service obligations force the faculty and the residents to function more in parallel, focused on different aspects of the work

before them, and less as mentors of each other. Adequate patient care is rendered, but the rich enhancement of care afforded by a true educational model is compromised. Residents tell us of teaching rounds that consist of completing documentation requirements. Creating space for dialogue between faculty and residents around issues of the care of patients is a prerequisite for the educational model, not a luxury.

Exhaustion is not incompatible with good patient care, but there should be a very good reason to accept it as a normative condition. Some situations are so delicate and so complex that a tired physician who has been actively following the case offers more than a rested colleague who is unfamiliar with the patient. An intimate understanding of recent events, detection of subtle changes in the patient's condition, and monitoring the effects of a therapeutic intervention can all be enhanced by a constant observer, and at times the resident is the only constant observer that the system offers. As the Surgical Program Requirements state, there are times when "continuity takes precedence." Yet this also can be abused. A pattern of exhaustion that is not driven by a given patient's needs but by the system's needs for someone to "cover the house" cannot be condoned. Adequate layered coverage must be available. If the profession cannot guide its behavior by its values, but instead thwarts its values to achieve convenient ends, we have indeed identified the Achilles heel of the profession.

Sometimes residents themselves initiate long hours in order to become more experienced in caring for patients. The more frequently doctors do something, the better they become at doing it. For some procedures it is clear that clinical outcomes are directly related to the experience of the surgeon. Prudence dictates that residents should not be able to function independently unless they have that experience. Yet prudence also suggests that we must broaden our options for achieving this end. Working beyond exhaustion or extending the length of an already long training program are not optimal solutions. Individual learning plans for par-

ticular procedures could be developed during residency and extended beyond residency training. Simulators and virtual reality devices of r another approach. The continuum of medical education is real and does not stop at residency. Bridges between competent and proficient need to be built.

Residents also tell us that they spend an inordinate amount of time getting things done. Their mantra is "It's really weird how they do things around here." The system should make it easy to do the right thing and hard to do the wrong thing. At times the reverse seems true. Broken systems tend to distract the resident from the direct care of patients. They exhaust and frustrate needlessly. Although aware of opportunities to improve the system, residents are not empowered to do so. It is an alienating experience. Faculty must be empowered but not compelled because the resident bears the brunt of the problem. "Uncovering" a service, and asking the faculty to manage the patients for a finite period of time in the absence of residents may expose system problems and illuminate possible solutions. This experiment has been tried and in some settings has worked.

Let me repeat: Whenever we act in a manner inconsistent with our values the profession is weakened. The ACGME released the data on the frequency of work-hour citations, and those data indicate that we indeed are acting at odds with our values. If we abuse our trainees and compromise patient care our status as a profession is jeopardized. The solution call for cooperation between CEOs and deans, between department chairs and program directors. The requirements don't need to be rewritten, they need to guide our behavior. Meanwhile the ACGME will continue to monitor and publish its observations, and repetitive patterns of work-hour violations will result in adverse accreditation actions.

—David C. Leach, MD

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Competency Perspective on Teaching

Christine Taylor & Susan Swing

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   2. Teaching/Learning is Criteria Driven and Focused On Accountability

   3. Teaching and Learning Grounded in Real-Life Experiences

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Competency Perspective on Teaching

I. Introduction/Background

Competency-Based Education (CBE) is an approach to instruction and assessment that places primary emphasis on identifying and measuring specific learning outcomes, or competencies. Unlike general goals, competencies are written as real-life abilities that are required for effective professional practice.

In 1999, as one of the steps in its Outcome Project, the ACGME approved six *General Competency domains*. The competencies represent areas of skill and knowledge that residents are expected to demonstrate before graduation. The ACGME identified these six competencies after extensive research and collaboration with a wide array of knowledgeable and interested constituents. The major purposes and components of the ACGME Outcome Project and the six General Competencies are compatible with CBE.

The purpose of this current project is to provide residency directors and faculty with suggestions and examples of teaching methods that are 1) consistent with the characteristics of competency-based education, and 2) useful for providing learning opportunities in the six competencies.

II. Common Characteristics of CBE

After reviewing four decades of literature on competency-based education, five characteristics stand out as being particularly descriptive of teaching from the perspective of competency-based education. In CBE, teaching and learning are:

1.   explicit and clearly aligned with expected competencies;

2.   criteria-driven, focusing on accountability in reaching benchmarks and, ultimately, competence;

3.   grounded in "real-life" experiences;

4.   focused on fostering the learners' ability to self-assess;

5.   individualized, providing more opportunities for independent study.

For many residency programs, the change to teaching from a CBE perspective will require very little adjustment; for others, the change may seem more substantial. Teaching venues will remain the same. Residents will still attend lectures and learn at the bedside, in both the outpatient clinic and operating room; they will continue, as well, to participate in small group clinical conferences and morning report. Some programs, however, may have to identify and communicate sooner the exact learning objectives and the criteria by which they will be assessed, as well as the degree to which additional guided or independent study may be necessary.

Further descriptions of these five characteristics follow.

1. **Teaching/Learning is Explicit and Clearly Aligned With Expected Competencies**

The "residency experience" is rich in opportunities to learn. Rotations, however, are often hectic, and learning opportunities may be missed because of timing, confusion about learning priorities, and limited contact with patients. Often, especially early in residency training, a rotation is completed before residents recognize where to focus their attention. The same may be true for the didactic curriculum, where general topics and the "disease of the week" are presented to residents, without the outcomes or expected competencies being clearly identified.

> ➤ In CBE, teaching and learning are purposeful. They are made so by explicitly stated learning goals, defined in advance and linked with competencies. Faculty, therefore, must consider the six general competencies when planning instructional activities, and must provide clear learning objectives that link the experience with the competency.

> ➤ Explicit learning objectives linked to competencies and identified in advance of an instructional event provide focus and direction, and make clear the full breadth of expected performance for purposes of teaching and learning. For example, a competency such as communication skills, that may have been overshadowed in the past in the quest for medical knowledge, can be highlighted and integrated into clinical and didactic teaching.

> ➤ In support of CBE, research shows that students learn better when goals, instruction, and outcomes are aligned. Studies in higher education have found that providing learners with early guidance and continuing comment leads to increased learning, higher skill levels, and higher self-esteem.

2. Teaching/Learning is Criteria Driven and Focused On Accountability

With the advent of the ACGME competencies, it is likely that residents as well as practicing physicians will be asked to meet performance-based, competency standards when applying for licensure and re-licensure. Because the accreditation process is now more focused on setting, achieving, and maintaining standards, instruction should be designed in careful alignment with the identified outcomes or competencies. Explicit rather than general instruction should predominate, helping learners to place new information into a form that is useful in practice.

> Although "accountability" is gauged primarily through assessment tools, instruction that provides benchmarks and promotes feedback, self-assessment, consideration of clinical evidence, and the prudent use of practice guidelines leads to an "accountability mindset" in the program and its faculty and residents.

> In a competency-based educational system, residents are measured against clear criteria rather than against one another. This practice reduces subjectivity and competitive pressure. Thus it is easier for residents to work cooperatively and become resources for one another as they strive to meet standards.

> Determining performance criteria will be a challenge since evidence-based gold standards for resident performance in the competency areas generally are not available. Faculty, therefore, will need to use their best judgment, the consensus of their peers, and criteria-like resources that are available, such as evidence-based clinical guidelines.

3. **Teaching and Learning Grounded in Real-Life Experiences**

From the earliest conception of competency-based education in the 1960's, competencies have been framed as the active performance of real-life roles consistent with effective practice. Competencies are composed of more than knowledge and skills; they are knowledge and skills and attitudes synthesized into effective performance. The ACGME competency domains are all essential to the practice of medicine, with their sub-goals framed in performance (click here to review general competencies).

> Much of residency education occurs as residents are performing patient care activities in the same settings where professional practice will occur. Thus residency education exemplifies this aspect of CBE.

> Learning opportunities provided through lectures, conferences, and independent reading are not as close to "real-life" as the experiential learning that takes place in the clinical setting. Nonetheless, they are consistent with CBE when they focus on the actual problems of patients and their families, as well as on the problems inherent in the delivery of efficient, effective, compassionate health care. These learning opportunities should be based in real or simulated clinical problems, and should be guided by experienced faculty using reflections, questions, assignments, and feedback.

4. **Teaching and Learning Strategies are Focused on Fostering the Learners' Ability To Self-Assess**

It is essential that residents become good judges of their own competence. It is generally accepted that individuals learn to judge their own performance in a number of ways, but most often by comparing their own abilities to some external standard and then internalizing that standard. A standard may be written objectives (as in the competencies) or, more powerfully, may be the skilled performance of influential and credible role models.

> ➤ By developing learning and performance standards from the competencies, and by communicating those standards to residents, faculty provide a more objective basis for resident self-assessment.

> ➤ When residents observe the skilled practice of experienced clinicians, they may or may not understand the thought process that guided that action. When experienced clinicians reflect on their decision making, however, residents are more likely to truly understand the actions of their teachers, to model that behavior, and to eventually establish appropriate standards. Without these types of discussions, residents remain uncertain about their observations and gain less from the interactions.

> ➤ By providing feedback to residents and encouraging them to reflect on their own clinical behavior, residents will become better judges of their own abilities. Although the attending physician is the usual source for feedback, nurses, peers and patients through a 360° evaluation can provide other insights into residents' performance and so potentially affect the internal standards set.

5. Teaching And Learning Is More Individualized, Providing Opportunities For Independent Study

Throughout its history, competency-based education has been sensitive to the differing backgrounds, learning styles, aptitudes, and abilities of learners. As experienced educators, we know that interns enter residency with different knowledge and skills, and that residents enter new rotations or educational experiences with differing abilities, motivation, and knowledge bases. If all residents are expected to reach competency, it stands to reason that we will have to provide additional resources to those who start out at a disadvantage or who learn best through individual study and practice.

> ➤ Individualized study in the form, for example, of portfolio entries, computer-based learning modules, virtual conferences, and interactions with standardized patients provide residents with the options for self-paced study and learning.

> ➤ Individualized study can be offered as complementary to other group learning activities or as "stand alone" learning modules. For example, the PowerPoint slides from a lecture could be provided at the residency website for later review, or the presentation, with pre-tests and post-tests could be placed on the website in place of a lecture.

> ➤ Although computer-based learning modules provide an efficient means for transmitting certain types of information, and "virtual clinics" do a good job of simulating patient interaction, nothing can replace the advice of a mentor or the real-life interaction with a patient. Electronic media should be integrated with a strong interpersonal approach to learning.

Accreditation Council for Graduate Medical Education

Summary

Competency based residency education focuses on a resident's performance (learning outcomes)

The major goals of the Outcome Project are:

- Develop competence as a physician

- Improve patient care

Review Common Program requirements

Review the ACGME Timelines for Implementation

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American Medical Education 100 Years after the Flexner Report

Molly Cooke, M.D., David M. Irby, Ph.D., William Sullivan, Ph.D., and Kenneth M. Ludmerer, M.D.

Medical education seems to be in a perpetual state of unrest. From the early 1900s to the present, more than a score of reports from foundations, educational bodies, and professional task forces have criticized medical education for emphasizing scientific knowledge over biologic understanding, clinical reasoning, practical skill, and the development of character, compassion, and integrity.[1,2,3,4] How did this situation arise, and what can be done about it? In this article, which introduces a new series on medical education in the *Journal*, we summarize the changes in medical education over the past century and describe the current challenges, using as a framework the key goals of professional education: to transmit knowledge, to impart skills, and to inculcate the values of the profession.

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Abraham Flexner and American Medical Education

Almost a century ago, Abraham Flexner, a research scholar at the Carnegie Foundation for the Advancement of Teaching, undertook an assessment of medical education in North America, visiting all 155 medical schools then in operation in the United States and Canada. His 1910 report, addressed primarily to the public, helped change the face of American medical education.[5,6,7] The power of Flexner's report derived from his emphasis on the scientific basis of medical practice, the comprehensive nature of his survey, and the appeal of his message to the American public. Although reform in medical education was already under way, Flexner's report fueled change by criticizing the mediocre quality and profit motive of many schools and teachers, the inadequate curricula and facilities at a number of schools, and the nonscientific approach to preparation for the profession, which contrasted with the university-based system of medical education in Germany.

(Figure)

Abraham Flexner.

Courtesy of the Carnegie Corporation of New York.

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At the core of Flexner's view was the notion that formal analytic reasoning, the kind of thinking integral to the natural sciences, should hold pride of place in the intellectual training of physicians. This idea was pioneered at Harvard University, the University of Michigan, and the University of Pennsylvania in the 1880s but was most fully expressed in the educational program at Johns Hopkins University, which Flexner regarded as the ideal for medical education.[8] In addition to a scientific foundation for medical education, Flexner envisioned a clinical phase of education in academically oriented hospitals, where thoughtful clinicians would pursue research stimulated by the questions that arose in the course of patient care and teach their students to do the same. To Flexner, research was not an end in its own right; it was important because it led to better patient care and teaching. Indeed, he subscribed to the motto, "Think much; publish little."[9]

Transformation of Medicine in the 20th Century

The academic environment has been transformed since Flexner's day. In academic hospitals, research quickly outstripped teaching in importance, and a "publish or perish" culture emerged in American universities and medical schools. Research productivity became the metric by which faculty accomplishment was judged; teaching, caring for patients, and addressing broader public health issues were viewed as less important activities. Thus, today's subordination of teaching to research, as well as the narrow gaze of American medical education on biologic matters, represents a long-standing tradition.[8]

In addition to the shift in the importance of research relative to teaching and patient care, a transformation in the process of research on human disease has contributed to our current state of affairs. For the first half of the 20th century, a distinctive feature of American medical education was the integration of investigation with teaching and patient care. Teaching, clinical care, and investigation each served the others' purposes, because most research was based on the direct examination of patients. Gifted clinical investigators tended to be equally gifted as clinicians and clinical teachers. After 1960, however, as medical research became increasingly molecular in orientation, patients were bypassed in most cutting-edge investigations, and immersion in the laboratory became necessary for the most prestigious scientific projects. Clinical teachers found it increasingly difficult to be first-tier researchers, and fewer and fewer investigators could bring the depth of clinical knowledge and experience to teaching that they once had.[10]

The increasing turbulence of the health care environment in the past 20 years has generated a second set of conditions inimical to medical education as Flexner imagined it. Clinical teachers have been under intensifying pressure to increase their clinical productivity — that is, to generate revenues by providing care for paying patients.[11,12,13] As a result, they have less time available for teaching, often to their immense frustration. In addition, the harsh, commercial atmosphere of the marketplace has permeated many academic medical centers. Students hear institutional leaders speaking more about

"throughput," "capture of market share," "units of service," and the financial "bottom line" than about the prevention and relief of suffering. Students learn from this culture that health care as a business may threaten medicine as a calling.

Thus we arrive at our current predicament: medical students and residents are often taught clinical medicine either by faculty who spend very limited time seeing patients and honing their clinical skills (and who regard the practice of medicine as a secondary activity in their careers) or by teachers who have little familiarity with modern biomedical science (and who see few, if any, academic rewards in leaving their busy practices to teach). In either case, many clinical teachers no longer exemplify Flexner's model of the clinician-investigator.

Learning Medicine as Professional Education

All forms of professional education share the goal of readying students for accomplished and responsible practice in service to others. Thus, professionals in training must master both abundant theory and large bodies of knowledge; the final test of their efforts, however, will be not what they know but what they do. The purpose of medical education is to transmit the knowledge, impart the skills, and inculcate the values of the profession in an appropriately balanced and integrated manner.[14,15] In the apprenticeship model of medical training that prevailed into the mid-19th century, student physicians encountered this knowledge and these skills and values as enacted by their teachers in the course of caring for patients. How are knowledge, skills, and professional values represented in contemporary medical education?

The way in which students encounter the knowledge base of medicine has been profoundly influenced, as Flexner intended, by the assimilation of medical education into the culture of the university: Theoretical, scientific knowledge formulated in context-free and value-neutral terms is seen as the primary basis for medical knowledge and reasoning. This knowledge is grounded in the basic sciences; the academy accommodates less comfortably the practical skills and distinct moral orientation required for successful practice in medicine. However, Flexner had not intended that such knowledge should be the sole or even the predominant basis for clinical decision making.[2] Within 15 years after issuing his report, Flexner had come to believe that the medical curriculum overweighted the scientific aspects of medicine to the exclusion of the social and humanistic aspects. He wrote in 1925, "Scientific medicine in America — young, vigorous and positivistic — is today sadly deficient in cultural and philosophic background."[16] He undoubtedly would be disappointed to see the extent to which this critique still holds true.

Responsibility for the care of patients is a powerful stimulus for learning,[17] and active learning requires that clinical skills, both cognitive and procedural, be attained through the supervised provision of patient care. As Flexner recognized, medical novices require the opportunity to practice skills under the guidance of experienced teaching physicians until they attain a high level of proficiency. Increasing attention to the quality of care, patient safety, and documentation of care enhances medical practice[18] but threatens to relegate trainees to the role of passive observer. Given that every patient deserves the best possible care, we are challenged to provide appropriate opportunities for experiential learning and practice while meeting the service demands of teaching hospitals. The educational mission of teaching hospitals is further compromised by the absence of performance standards and assessment methods that can clearly establish that learners are ready to advance to the next level of independence and challenge.

The moral dimension of medical education requires that students and residents acquire a crucial set of professional values and qualities, at the heart of which is the willingness to put the needs of the patient first. A generation ago, the hours worked served as a simple proxy for dedication to patients; now, an appropriate concern for the well-being of trainees and the safety of their patients demands a new understanding of what it means to be dedicated to one's patients.[12] Professional values are continuously exemplified and enacted in the course of medical education through role modeling, setting expectations, telling stories and parables, and interacting with the health care environment, not just in courses on ethics and patient–doctor communication. However, the values of the profession are becoming increasingly difficult for learners to discern; the conclusions they draw, as they witness the struggle of underinsured working people to obtain health care,

marked differences in the use of expensive technologies in different health care environments, and their physician-teachers in complicated relationships with companies that make health care products, should concern us.

Not only has the knowledge base for medical practice hypertrophied since Flexner's day, but the delivery of care has also become vastly more complicated, and the expectations of the public higher. However, it has been difficult to integrate the new skills, knowledge, and attitudes required for proficient practice into medical education at both the predoctoral and residency levels. Although many students and residents are interested in learning about interprofessional teamwork, population health, and health policy and the organization of health services, these topics tend to be poorly represented in medical school and residency curricula. It can be hard to teach messy real-world issues, but practitioners need to understand how these issues affect their patients and how to interact with, and ultimately improve, an exceedingly complex and fragmented system to provide good patient care.

Preparing Physicians for the 21st Century

What can be done to bring the knowledge, skills, and values that must be imparted by medical education into better balance and to prepare outstanding physicians for the 21st century? As the articles in this series will illustrate, the solutions are apparent for some problems, but medical schools and the institutions that sponsor residency programs need to develop the will to implement them. Other problems are more complex, and their solutions more uncertain. With respect to medical knowledge, the gaps between what we know about how people learn and how medicine is currently taught can be corrected. Cognitive psychology has demonstrated that facts and concepts are best recalled and put into service when they are taught, practiced, and assessed in the context in which they will be used.[20] Several decades of research on clinical expertise have elucidated the thinking of physicians as they evaluate signs and symptoms, select and interpret diagnostic tests, and synthesize data to develop clinical assessments and care plans; these insights can be shared with learners as well as their teachers.[21]

The acquisition of skills for practice requires radical transformation. Although the dictum "see one, do one, teach one" may have characterized the way in which clinical skills were learned in the past, it is now clear that for training in skills to be effective, learners at all levels must have the opportunity to compare their performance with a standard and to practice until an acceptable level of proficiency is attained. An appreciation of the importance of practice and the honest admission that neophytes cannot perform high-stakes procedures at an acceptable level of proficiency demand that we develop approaches to skills training that do not put our patients at risk in service to education. The use of increasingly sophisticated simulations and virtual reality offers physicians at all levels the opportunity to refresh skills and learn new ones in a safe practice environment. Educational methods that allow the demonstration of mastery at one level, with respect to both technique and judgment, before progression to the next level teach an important lesson in professionalism as well.

The groundwork that has been laid by explicit instruction in professionalism, combined with effective role modeling and attention to the hidden curriculum of the practice environment, can support the development of a comprehensive and sophisticated understanding of professional education.[22] Sociologists have noted the importance of socialization and implicit learning in the development of professional attitudes and behaviors.[23]

It has long been observed that assessment drives learning. If we care whether medical students and residents become skillful practitioners and sensitive and compassionate healers, as well as knowledgeable technicians, our approaches to the evaluation of learners must reach beyond knowledge to rigorously assess procedural skills, judgment, and commitment to patients. Self-assessment, peer evaluations, portfolios of the learner's work, written assessments of clinical reasoning, standardized patient examinations, oral examinations, and sophisticated simulations are used increasingly to support the acquisition of appropriate professional values as well as knowledge, reasoning, and skills. Rigorous assessment has the potential to inspire learning, influence values, reinforce competence, and reassure the

public.[24]

Much of what we know about effective interventions is not translated from research settings into everyday patient care. Increasing emphasis is being placed on evidence-based practice, systems approaches, and quality improvement. Advances in these areas require the ability to integrate scientific discoveries and context-specific experimentation for the continuous improvement of the processes of medical practice. New paradigms that connect these processes are emerging, and they have the potential to revolutionize both the way in which people learn and the environment in which learning takes place.[25]

Finding the Will to Change

The need for a fundamental redesign of the content of medical training is clear. In some instances, the road that needs to be taken is also clear — for example, more emphasis should be placed on the social, economic, and political aspects of health care delivery. However, curricular reform is never simple or easy, and "turf battles" are inevitable. The challenge is not defining the appropriate content but rather incorporating it into the curriculum in a manner that emphasizes its importance relative to the traditional biomedical content and then finding and preparing faculty to teach this revised curriculum.[26,27,28]

Reform of the process of clinical education is even more challenging; however, both regulatory and voluntary efforts are under way.[29,30] Some schools are developing clerkships that no longer focus solely on departmental inpatient services but instead include interdisciplinary approaches to the teaching of inpatient and outpatient care.[31,32] Long-term preceptorships or apprenticeships are being reestablished to ensure adequate observation, supervision, and mentoring of trainees. Proposed reforms of residency education in both medicine and surgery include shortened core rotations and earlier specialty training.[33,34,35] But who will do the teaching? Early experiments to identify, celebrate, and support a cadre of outstanding clinician-teachers, side by side with the laboratory-scientists and physician-scientists who are academic medicine's first-class citizens, hold promise for developing the innovative programs and providing the attentive supervision, assessment, and mentoring that beginning physicians need.[36]

A final problem is the financing of medical education.[23,37,38,39] Good teaching, whether it is conducted in the classroom, clinic, or hospital, requires time. Innovative approaches to teaching, progressive skills instruction, multitiered assessment, and support of the development of professionalism all require teachers who have the time to observe, instruct, coach, and assess their students and who also have time for self-reflection and their own professional development. Although the educational mission is expensive, many medical schools already possess the funds to support teaching properly, if they choose to use the funds for this purpose.[40]

One hundred years ago, Flexner's critique of medical education converted an evolutionary change already under way in North American medical education into a revolution. Medicine and the sciences underpinning it have made equally transformative advances since Flexner's report, and once again, our approach to education is inadequate to meet the needs of medicine. Ossified curricular structures, a persistent focus on the factual minutiae of today's knowledge base, distracted and overcommitted teaching faculty, archaic assessment practices, and regulatory constraints abound. These challenges threaten the integrated acquisition of technical knowledge and contextual understanding, the appropriately supervised mastery of practical skills, and the internalization of essential values that together make for an informed, curious, compassionate, proficient, and moral physician.

No one would cheer more loudly for a change in medical education than Abraham Flexner. He recognized that medical education had to reconfigure itself in response to changing scientific, social, and economic circumstances in order to flourish from one generation to the next. The flexibility and freedom to change — indeed, the mandate to do so — were part of Flexner's essential message. He would undoubtedly support the fundamental restructuring of medical education

needed today. Indeed, we suspect he would find it long overdue.

Source Information

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TRAINING TOMORROW'S DOCTORS

The Medical Education Mission of Academic Health Centers

A Report of The Commonwealth Fund
Task Force on Academic Health Centers

April 2002

THE COMMONWEALTH FUND
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PROLOGUE

Training Tomorrow's Doctors: The Medical Education Mission of Academic Health Centers marks the fifth in a series of reports prepared by the Commonwealth Fund Task Force on Academic Health Centers to examine the impact of health system change on the social and academic missions of these institutions. These missions consist of teaching, research, the provision of highly specialized services, and continuous innovation in patient care.

The first report of the Task Force, *Leveling the Playing Field*, explored the effects of competition in health care markets on the organization and financing of the academic health center (AHC) enterprise. In the second report, *From Bench to Bedside*, the Task Force examined the status of AHCs' research mission, made recommendations for distributing federal research funds, and explored how AHCs could improve their internal management of research activities. The Task Force's third report, *Health Care at the Cutting Edge*, described the crucial roles played by AHCs in the development and delivery of highly specialized, technologically complex medical services and suggested ways in which government policy could support such activities. The fourth report, *A Shared Responsibility*, documented the contributions of AHCs, particularly those that are publicly owned, in providing medical care to indigent and uninsured patients; it also recommended ways to distribute public funds more rationally among hospitals in order to improve access to care in the absence of universal insurance coverage. This fifth and final report on AHCs' missions addresses what is perhaps the fundamental rationale for their existence: the education of the nation's health care workforce.

Medical education in the United States faces a number of challenges, including the rapid increase in biomedical knowledge, constraints on cross-subsidies from clinical activities, and fundamental changes in how adults are educated in a medical setting. Despite these developments, the Task Force has found that AHCs have largely succeeded in sustaining the essence of their educational activities. In this report, the Task Force recommends steps that medical schools and AHCs, accrediting organizations, and government can take to foster continued improvement and reform of medical education and its financing.

We are grateful to The Commonwealth Fund for its support of this project and to the members of the Task Force and its staff for their wisdom and hard work. In the future, we hope that the Task Force will contribute to further understanding of how the nation can promote the effectiveness and efficiency with which it conducts the social missions of AHCs.

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EXECUTIVE SUMMARY

In addition to their unique mission of training the next generation of health care professionals, the nation's 125 academic health centers (AHCs)—medical schools and their closely affiliated hospitals and physician groups—perform services that benefit all of society. As institutions, AHCs conduct biomedical research to improve the quality and effectiveness of medical care, provide highly specialized health care services, and care for the poor and underserved.

Although these other missions of AHCs sometimes receive more attention, none is more important to the future of the American health care system than the education of physicians. This report of the Commonwealth Fund Task Force on Academic Health Centers is intended as a resource to guide future policy development in the field of medical education.

This report begins with sections that outline the organization and size of the medical education enterprise, how medical education is financed, the unique role of AHCs in the medical education process, and the importance of medical education to various individuals and organizations in our society. Next are presented the Task Force findings on the nature and extent of the challenges facing AHCs and their educational missions, as well as how AHCs have responded to these challenges. The next section presents a set of conclusions and guiding principles based on the findings. The final section presents recommendations grouped as those for AHCs, accreditation and similar groups, and public policy. The findings, conclusions and principles, and recommendations are summarized in the following lists.

Findings

The first six findings in this report relate to the nature and extent of the challenges facing the educational mission of AHCs.

1. The scientific basis of medical practice expands exponentially.

2. The nature and demands of medical practice are changing.

3. Methods of instruction in medical education evolve at a rapid pace. Innovations can be costly to implement and to sustain over time.

4. The clinical environment within AHCs is widely perceived as unreceptive to medical education.

5. Pressures on the clinical enterprise undermine financial support for medical education.

6. The medical education activities of faculty are valued less than research and patient care at AHCs.

The second set of findings demonstrate how AHCs are responding to the challenges facing their educational missions.

7. AHCs are undertaking reforms to prepare physicians better for the demands of modern medical practice, such as practice in ambulatory and community-based settings.

8. AHCs seem to have succeeded in preserving the quality of their educational missions from environmental and financial pressures.

9. AHCs vary considerably in their use of educational innovations and reforms and in addressing the perceived inadequacies in their curriculum.

10. The quality of GME instruction in nonhospital settings lags behind that found in traditional settings.

11. The quality of training may vary systematically from one training program to another.

12. The number of underrepresented minorities in medical schools remains below their proportion in the population as a whole.

13. Data are inadequate to gauge the performance of AHCs in conducting their educational missions.

Conclusions and Principles

Based on these findings the Task Force has developed a series of conclusions and principles related to medical education to inform the attitudes and activities of policymakers, managers, and educators.

Conclusions

- The content and quality of physician training will remain vital for the foreseeable future to the health of the American people, their peace of mind, and the effective functioning of the American health care system.

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- AHCs play a critical role in the training of American physicians and have a number of unique advantages for performing this task.

- Government has a legitimate concern with assuring the competence of our physician workforce and thus with the training missions of AHCs.

- AHCs face significant challenges in fulfilling their educational roles.

- The available data are insufficient to judge the performance of AHCs in discharging their educational responsibilities beyond establishing a minimum level of competency.

Principles

- AHCs should be held accountable for their performance in educating the nation's physicians.

- The extra clinical costs associated with the educational missions of AHCs should be borne broadly and fairly by the beneficiaries of the educational activities of these institutions.

Recommendations

Drawing on the findings, conclusions, and principles, the Task Force makes the following recommendations.

Recommendations for AHCs

- AHCs should include the continuous improvement of medical education among their highest priorities.

- AHCs should develop new ways to measure the costs and quality of their medical education missions.

- AHCs should establish mechanisms that encourage faculty to engage in educational activities and to expand and improve their teaching skills.

- Academic health centers should increase efforts to recruit underrepresented minorities and to prepare young physicians to care for an increasingly diverse population.

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Recommendation for Accrediting Organizations and Similar Groups

- Accrediting organizations and medical professional organizations should take a leadership role in assisting AHCs to develop the methods needed to train physicians to be lifelong learners and should develop new capabilities to measure the costs and quality of the medical education mission.

Recommendations for Public Policy

- Government should support research and development to produce valid and reliable measures of the costs and quality of UME and GME.

- A comprehensive public strategy is needed to cover the added costs of clinical care that accompany medical education activities. This strategy should establish a stable and explicit source of funding for medical education and should distribute these costs broadly and equitably among those who benefit from medical education. Further, this strategy should allow AHCs to compete with other providers of health care services.

- Until a strategy is developed, federal and state governments should continue to pay their fair share of the incremental clinical costs associated with UME and GME.

I. INTRODUCTION

As a society, we are experiencing a period of revolutionary change in the science and practice of medicine. The pace of advances in medical knowledge is unprecedented, as is the pace of change in the organization and financing of health care services. In the space of a decade, the human genome was mapped, managed care fundamentally altered the delivery of care, and the information revolution fueled the empowerment of health care consumers as never before. Everything in health care seems different.

Yet some things remain constant. Despite fundamental shifts in medical science and the structure of the health care system, the overwhelming majority of Americans continue to get their health care in direct interactions with physicians, who thus bear most of the responsibility of guiding patients through an increasingly complex health care environment. At present, the physician remains a critical factor in determining the quality and cost of care received by the American public. That means, in turn, that the quality of medical students and residents and the nature of their educational experiences continue to play a critical role in realizing the objectives of our health care system. It follows that the education of physicians and their familiarity with and ability to use new medical discoveries and to manage a system in turmoil has never been more important.

The education of our nation's physicians occurs primarily in academic health centers (AHCs)—the 125 medical schools and their affiliated or owned clinical facilities. These institutions also play a critical role in other activities vital to the health and welfare of Americans, such as the conduct of biomedical research, the provision of high technology and specialized services, and the care of poor and uninsured patients. Though these social missions of AHCs sometimes receive more attention, none is more important to the future of the American health care system than the education of future physicians during these fast-changing times. This report of the Commonwealth Fund Task Force on Academic Health Centers examines the current status of the educational mission of AHCs and makes recommendations to improve the conduct of that mission by AHCs.

The field of medical education is both wide and deep. More than one professional journal is dedicated to studies and commentary on this field, and numerous governmental, quasi-governmental, and independent organizations track issues in medical education and the formulation of related public policy. The Task Force has benefited greatly from reports and position papers by the Council on Graduate Medical Education (COGME), the Medicare Payment Advisory Commission (MedPAC), the Pew Health Professions

Commission, the Accreditation Council on Graduate Medical Education (ACGME), the Association of American Medical Colleges (AAMC), the American Medical Association (AMA), and others.

The goal of the Task Force in writing this report is neither to replicate all of this work nor to summarize it fully. Rather, with this report the Task Force seeks to understand the implications of educating American physicians predominantly in institutions that face a particular set of financial, clinical, organizational, and cultural challenges at the current time. The development of medical education policy and management must be informed by a full appreciation of the current status of these institutions, and their role in the training of physicians.

The report is organized into four sections. A background section describes certain basic characteristics of the medical education system in the United States. A second section reviews the major findings of the Task Force regarding the educational mission of AHCs. These findings detail the challenges facing this educational mission, how AHCs have responded, and where more work is needed. A conclusions and principles section summarizes the Task Force's findings and the principles that guide its subsequent recommendations. The last section provides those recommendations, which concern both public policy and private management of medical education.

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II. BACKGROUND ON THE ORGANIZATION AND SIZE OF THE MEDICAL EDUCATION ENTERPRISE

Medical education takes place in two stages. The first—undergraduate medical education (UME)—consists of the four years that students spend in medical school. The second stage of medical education, commonly referred to as graduate medical education (GME), begins after medical school and consists of several years of residency followed by additional postresidency training for those who pursue subspecialization. This report addresses UME and the residency period of GME.

Undergraduate Medical Education

Traditionally, UME has been divided into two segments, each two years in length. During the first two-year segment of medical school (often referred to as the preclinical years), students focus primarily on developing a deeper understanding of the sciences underlying modern medicine, such as biochemistry, microbiology, anatomy and physiology, immunology, pathophysiology, genetics, and pharmacology. Students also participate in introductory clinical activities during this period, which introduce them to the basics of taking a medical history and conducting a physical examination.

The second two-year segment of UME (usually referred to as the clinical years) focuses on instruction in the major clinical disciplines, such as surgery, internal medicine, obstetrics and gynecology, pediatrics, and psychiatry. The goal of the clinical years is to "familiarize students with the structure, function and behavior of the human organism in health and disease, to acquaint them with the causes, physiological disturbances and the natural history of various diseases, to provide an introduction to the principles of therapeutics and surgery, and to present the environmental and social influences."[1]

In most medical schools, the faculty (which includes those in the basic and clinical sciences) is responsible for the content of undergraduate medical education. The curricula of the first two years are subject to continuous review and debate among faculty representing the core scientific disciplines. In the latter two years, control over the content of medical education passes to the clinical faculty in the AHCs' clinical affiliates. There, chairpersons of clinical departments (such as medicine, surgery, or pediatrics) and directors of clinical units (such as cardiology, nephrology, cardiac surgery, or urology) assume responsibility for the content and quality of the UME experience. Students rotate for designated intervals through particular clinical settings in which they learn more advanced diagnostic skills and the rudiments of treatment.

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Several interlocking bodies serve to ensure the quality of medical education at the national level. The Liaison Committee on Medical Education (LCME) accredits medical schools for the purpose of assuring the quality of students' education. The LCME is a joint activity of the Council on Medical Education of the AMA and the AAMC. Representatives of the LCME visit each medical school on a regular basis to assess whether its curriculum and the experiences of its students meet national standards of function, structure, and performance. Participation in federal student loan programs requires accreditation by the LCME. Most states require graduation from an accredited school as a condition of licensure.

On the national level, the National Board of Medical Examiners (NBME) and the Federation of State Medical Boards (FSMB) cosponsor the United States Medical Licensing Examination (USMLE™), a three-step examination for medical licensure. Most medical licensing authorities in the United States require passage of this exam before granting an initial license to practice medicine. Students normally must pass at least two of the three steps before entering an ACGME-approved residency or fellowship program. Through its program of certification, the Educational Commission for Foreign Medical Graduates (ECFMG®) performs a similar service for physicians from foreign medical schools who wish to practice in the United States.

Over the last 40 years, the size of the UME enterprise has grown dramatically (Table 1). The number of medical students doubled from 30,288 in 1960 to 66,489 in 1998.[1,2] Virtually all of this growth occurred from 1960 to 1980, when the number of fully accredited four-year medical schools increased from 81 to 115 and the average size of a freshman class increased from 8,069 to 16,590 nationally.[3]

---

[1] In keeping with the previous work of the Task Force, the educational contributions of the nation's 19 accredited osteopathic medical schools are not considered in this report.

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Table 1
Changes in the Size of UME, 1960–1999

Year	Fully Accredited Four-Year Medical Schools	First-Year Entrants	Total Medical Students
1960–61	81	8,069	30,288
1965–66	84	8,554	32,835
1970–71	87	11,169	40,487
1975–76	109	14,898	55,818
1980–81	115	16,590	65,189
1985–86	126	16,268	66,585
1990–91	125[a]	15,998	65,163
1995–96	124[b]	16,253	66,970
1998–99	124	16,170	66,489

[a] The decrease of 126 to 125 reflects the closure of the Medical School at Oral Roberts University in 1990–91.

[b] The decrease from 125 to 124 reflects the merger of Medical College of Pennsylvania and Hahnemann University in 1995.

Note: As of 2000–01, four medical schools are in the process of being opened. These include allopathic schools in Texas and Florida and two osteopathic schools.

Source: *AAMC Data Book: Statistical Information Related to Medical Schools and Teaching Hospitals*, January 2000. Washington, D.C.: Association of American Medical Colleges.

Graduate Medical Education

Graduate medical education typically lasts from three to nine years, depending on specialty, and consists of intense, experiential learning in the actual practice of medicine. The fundamental goal for residents is the development of clinical skills, primarily by providing direct patient care under the supervision and with the instruction of senior physicians, who make up the clinical faculty of medical schools and their associated teaching institutions. GME also includes a substantial component of didactic training designed to convey the knowledge essential to diagnosis and treatment. Didactic sessions include attending rounds, seminars, lectures, and reading in specific fields relevant to practice. During GME, medical students truly become physicians. At the completion of their residency, new physicians should be capable of handling independently all the major medical problems in their core disciplines.

The content and quality of graduate medical education is supervised by the ACGME, which includes representatives of all major medical disciplines. Under the aegis of the ACGME, 24 Residency Review Committees (RRCs) accredit all residency programs in their disciplines within the U.S. RRCs visit each program on a regular basis, review the content of the clinical and didactic programs in which residents participate,

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interview residents concerning their experiences, and make recommendations for improvement. The quality standards applied by the ACGME and its RRCs currently are based on structure and process rather than outcomes. Thus, the ACGME assesses whether the residents' experiences conform to a set of standards, but not whether program graduates are objectively competent to perform essential clinical tasks. Recently, however, the ACGME has initiated a multi-year initiative to develop and implement measures of residents' competency in six core areas,[4] which eventually will be incorporated into accreditation.

Another assurance of the competency of graduating residents is provided by medical disciplines themselves through the process of board certification. National panels of physicians from each major discipline (Medical Specialty Boards) meet regularly and compose examinations (National Certifying Exams). Physicians who pass those exams receive board certification, which provides further evidence that they have mastered the content of their disciplines. Some boards now require that physicians take these exams at periodic intervals throughout their careers (a process known as recertification) if they wish to remain board certified. Passage of national boards is not a precondition of licensure and practice, and physicians are free to advertise themselves as practitioners of a particular discipline without board certification.

The overall size of the GME enterprise has increased dramatically over the last 40 years. The total number of residents in U.S. clinical facilities has increased from 37,562 in 1960 to 97,989 in 1999 (Table 2). Among the many reasons for this growth are the growth in the UME enterprise, the increasing complexity of medical care (requiring longer periods of clinical training), the increased reliance of hospitals on residents as a source of labor, Medicare program incentives that encourage hospitals to increase the size of GME programs, the lack of a single national organization with the power to control the overall size of the GME enterprise, and an influx of graduates from foreign medical schools to U.S. residency programs.[5] From 1960 to 1999 the number of resident physicians who graduated from foreign medical schools increased from 9,935 to 25,880 (Table 2).

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The Blue Ridge Academic Health Group

Reforming Medical Education: Urgent Priority for the Academic Health Center in the New Century

May 2003

Mission: The Blue Ridge Academic Health Group seeks to take a societal view of health and health care needs and to identify recommendations for academic health centers (AHCs) to help create greater value for society. The Blue Ridge Group also recommends public policies to enable AHCs to accomplish these ends.

Report 7 • May 2003

The Blue Ridge Academic Health Group

Reforming Medical Education: Urgent

Priority for the Academic Health Center

in the New Century

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The Blue Ridge Academic Health Group Report 7

The Blue Ridge Academic Health Group (Blue Ridge Group) studies and reports on issues of fundamental importance to improve our health care system and enhance the ability of the academic health center (AHC) to sustain optimal progress in health and health care through sound research—both basic and applied—and health professional education. Six previous reports have described opportunities to improve AHC performance in a changed health care environment and to leverage AHC resources in achieving threshold improvements in health system access, quality, and cost. The Blue Ridge Group has sought to provide guidance to AHCs that can enhance leadership and knowledge management capabilities; aid in the adoption and development of Internet-based capabilities; contribute to the development of a more rational, comprehensive, and affordable health care system; improve management, including financial performance; and address the cultural and organizational barriers to professional, staff, and institutional success in a value-driven health system (Blue Ridge Academic Health Group 1998a, 1998b, 2000a, 2000b, 2001a, 2001b). In this, its seventh report, the Blue Ridge Group considers the need for academic health centers to reassess and improve the education of health professionals, with a special focus on physicians.

Exhibit 1: Summary of Recommendations

I. The art and science of education must become an explicit, manifest priority of the leadership of academic health centers (AHCs).

- Making education an explicit, manifest priority of leaders in academic health centers means that each AHC must create a strategy with identified resource needs (budget and personnel), a structure for management, and performance rewards.

- AHCs should devote more and better resources to teaching the clinical transaction as the core of the clinical relationship, integrating social and humanistic skills with appropriate technology, interdisciplinary education (MD, RN), team-based models of health care delivery, and evaluation of processes and outcomes.

- Within two years each AHC should identify its educational costs. This includes the educational infrastructure budget (technology, simulation, standardized patients, teacher education, training facilities, communications technology, faculty development, and personnel).

- AHCs must also identify new sources of funding, whether philanthropic, clinical, or public subsidy, so that they can substantially increase their investment in education within five years.

II. Health professional schools must pioneer and use advances in knowledge concerning cognitive development, styles of learning, and education theory and practice.

- AHCs must each develop a core of faculty with education expertise in the form of scholars who can serve in curriculum development and teacher education.

- Funding from institutional and external sources should support
  - faculty research in education,
  - the design and implementation of new models of human cognition, and
  - learning applied to the healing professions.

III. Health professional schools must improve support for faculty, resident, and volunteer educators.

- AHCs should make teacher development a primary focus of the institution by developing formal clinical educator training and support programs. These programs should prepare faculty members and senior residents for the education of medical students and residents and to meet the MSOP and ACGME core competencies. This should include skill enhancement for faculty, core educational curricula for residents, involvement of residents in

quality and process improvement initiatives, research capability in pedagogy, and regularly scheduled educational grand rounds in multiple departments. The McGill program serves as an excellent model. AHCs should also look to establishing formal training leading to a masters degree for those wishing to pursue scholarship and leadership in medical education.

- AHCs must protect time for teaching and for teacher development, including clinical onsite workshops.

- AHCs must work aggressively to develop better metrics for evidence of teaching quality and for faculty development in education for the promotion and tenure process.

IV. AHCs must structure appropriate and consistent learning environments.

- AHCs should systematically review and renew their roles as academic centers to ensure that their educational and service units operate within and are consistent with their university traditions of seeking evidence, truth, and technical competence within a humanistic environment.

- AHCs should modify their health professional curricula to incorporate humanistic and social science disciplines.

- AHCs should evaluate whether training can be made less lengthy and expensive, while improving productivity, quality, and patient satisfaction.

- AHCs should bring their facilities and technologies into line with their curricular goals, including provision for team medicine and team learning.

V. The regulatory framework must be streamlined and rationalized.

- AHC leadership must redefine and reassert the role of health professional schools as centers of responsibility, authority, and leadership for the lifelong education and training of health professionals.

- AHCs should work with all professionally related boards to ensure that proficiency and certification standards are consistent with competence and newly emerging educational strategies and goals. One example would be to

change the AMA Category I CME certification process so that it rewards only high-quality, evidence-based, cost-effective CME experiences.

- AHCs should participate in a national strategy to create a national education initiative. As a piece of that strategy, multiple components must be developed and AHCs must offer their fair share of leadership and resources to this key challenge.

   a. An IOM Initiative or Presidential/HHS Secretary/Congressionally mandated commission is needed to review the historic roles of professional societies in standard setting, evaluation, and regulation of UME, GME, and CME. This should entail a process that includes all key leaders of relevant organizations, including specialty boards, specialty societies, residency review committees, ACGME, USMLE, LCME, ACCME, and JCAHO, and their equivalents in nursing and other health professions.

   b. The charge to the IOM committee and/or commission would be to identify a rational system for the future, including a coordinating body and a strategy for moving from the present to the recommended model. The IOM committee should be asked to identify and assess a variety of models to assure oversight, responsibility, and accountability in medical and other health professional education. Funding for the initiative should be sought from AHCs, the US government, and philanthropic foundations.

   c. The IOM commission in particular should consider the creation of a National Institute of Health Education, which could logically find its home within the National Institutes of Health or the National Library of Medicine. This new institute should define its mandate broadly, including not only health professional education but also public health and patient information.

   d. AHCs need to work with others to develop and lead a campaign to ensure implementation of these recommendations. ResearchIAmerica is one successful model of such a comprehensive coalition effort.

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Introduction

Improving health and health care are among the most widely supported and important goals for our nation and the world today. Vitally important to progress in health is the proper education and training of the health professional workforce. Yet there is evidence of increasing dissatisfaction with the predominant models of health professional education, especially with the education of physicians. There is a growing consensus among scholars, policy makers, and health professionals that long-accepted education and training programs—from preprofessional preparation through continuing, lifelong learning—must be substantially redesigned and modernized to meet the projected health care needs of the 21st century (eg, Ludmerer 1999; AAMC 1998, 2000; IOM 2001, 2003).

This report is primarily concerned with needed reform in the education of physicians, the area where the Blue Ridge Group members have the greatest experience and expertise. Nevertheless, issues and recommendations identified here are applicable to training in nursing, public health, and other health professions as well. The Blue Ridge Group believes that the continuing shortcomings in medical education are predominantly the result of the failure of AHCs and others with educational and certification responsibility to address a number of critical and persistent underlying factors. Only by addressing these underlying issues will educational reform succeed.

Context

From early in the 20th century, education in the health professions, especially in medicine, has been founded upon the recommendations of the 1910 report by Abraham Flexner, *Medical Education in the United States and Canada*, sponsored by the Carnegie Endowment for the Advancement of Teaching. (It is worth mentioning here that seminal as Flexner's report proved to be, it reflected rather than instigated a movement toward scientifically oriented teaching hospitals that had been under way at least since the founding of Johns Hopkins Hospital in 1892.

The model for this new system was to be found in Germany, which drew an estimated 15,000 American medical students overseas from the end of the Civil War to the beginning of World War I.) Nevertheless, Flexner found that most medical education was of poor quality, largely because it was not grounded in scientific knowledge or method. Among the few exceptions were the programs at the University of Michigan and Johns Hopkins. Ignited by Flexner's report to the Carnegie Foundation, a revolution in medical education took place. The structure and process of medical education became a focus of some of the century's greatest physicians and educators, including Victor Vaughn at the University of Michigan and the "Four Horsemen" who comprised the founding medical faculty at Johns Hopkins (Osler, Halsted, Welch, and Kelly, who became known as the father of the residency system).

Medical education moved toward the almost universal adoption of what became known as the "Hopkins Model." As the new standard for medical education, the Hopkins model featured a two-part program consisting of intensive immersion in biomedical and related science followed by prescribed years of mentored clinical learning. Educational curricula became rigorous, standardized, and based in the fast-developing biomedical sciences. Medicine itself focused on understanding, diagnosing, and treating the biological and organic bases of disease. Clinical training centered on hospitalized patients at a time when medical costs were relatively low and the average patient spent anywhere from one to two weeks in the hospital. Graduate medical students could be immersed in multiple and complex cases and follow the entire course of diseases and their treatment. By 1924, when Flexner surveyed the medical school landscape, he found that the science-based education of students had become the core purpose of the medical school (Duffy 1993:210). At Michigan, for instance, a medical school known for its research intensity as well as its teaching, the average faculty member spent 60% of his time in teaching and teaching preparation (Ludmerer 1999:28). At the same time, Flexner warned that medicine could lose its way if it over-compensated and adopted rigid standards that did not allow for student reflection and humane interaction. One arguably

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deleterious consequence of this focus on disease treatment, however, was the relative neglect of health promotion and disease prevention. The closure of many medical schools following the Flexner report included not only institutions representing unscientific approaches, such as homeopathy, but also those serving under-represented minorities. During this era, all but one women's medical school and all but two black medical schools were shuttered. Nevertheless, the Hopkins model enabled the development of a highly rigorous, specialized, and meritocratic system of professional education that has changed little in almost a century.

During and after World War II, our nation developed a strong national interest in accelerating progress in the sciences and in rapidly boosting the supply of physicians. The shortened B-12 training program during the war produced many more doctors for service, while after the war the GI Bill supported an upsurge in the number of specialists. By the end of the 1950s, the nation had spawned no fewer than 723 surgical residencies (a number since reduced by nearly two-thirds). The federal government also made unprecedented commitments to the support of scientific research, through the establishment, for example, of the National Institutes of Health and the National Science Foundation. Schools competed to build the infrastructure and train (or acquire) the investigators through which they could grow their research portfolios. By the 1970s, the clinical mission also was enjoy-

ing a surge in focus and funding support. Employer-sponsored health insurance was well established and widely available. And with the establishment of Medicare and Medicaid in the mid 1960s, the government also had become a driver of health care financing and policy.

It is during this period that many began to express concern that the surge in funding support for research and clinical care was causing the teaching mission to recede as a priority. The Carnegie Foundation for the Advancement of Teaching continued to work in this area, led by Ernest L. Boyer, reporting that the "scholarship of teaching" was undervalued by universities in the past quarter-century. A special theme issue of *Academic Medicine* published in 2000, "Expanding the View of Scholarship," found that measures of the scholarship of teaching were "elusive" but important and insufficiently recognized in prevailing academic reward systems (see, eg, Beattie 2000). In the meantime, there was steady recognition within academic medicine of the need to maintain teaching as a priority, and likewise, there were regular expressions of anxiety that this focus was slipping. For example, a 1989 survey by the Robert Wood Johnson Foundation of more than 1,300 medical school educators, including deans and associate deans, found widespread agreement that "fundamental changes" were needed, including a better system to recognize and reward faculty for excellence in teaching (Cantor, et al 1991).

Exhibit 2: The Value-Driven Health System

A value-driven health system is grounded in the principle that a healthy population is a paramount social good. It is a health system that promotes the health of individuals and the population by providing incentives to health care providers, payers, communities, and states to improve population health status and reward cost-effective health management. Two kinds of incentives exist within a value-driven health system. First, there are incentives for individual citizens and/or patients, health care professionals, health delivery organizations, payers, and communities to seek and maintain health. Health insurance premiums, reimbursement rates, and grants to communities all can be structured to reward behaviors and strategies that advance health. Second, the system relies on competition among providers for populations to manage to reward safety, quality, and efficiency (where quality is defined in terms of the health of the community or region as well as health of individuals). To do this best requires a fully insured population (universal coverage) so that population health management strategies can be implemented and savings realized.

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Medical Education: A Patchwork

Leadership in educating health professionals and biomedical and behavioral scientists since Flexner has been provided by university-based schools of medicine, nursing, public health, dentistry, and allied health. Most medical schools anchor a university's academic health center (AHC), which normally consists of at least a medical school, one other health professions school, and one or more university allied or owned hospitals. Within the AHC, the professional schools exercise leadership primarily over the first two or three years of largely preclinical undergraduate medical education (UME). The early years of UME are taught in relatively standardized curricula primarily by basic science faculty who, on a rotating basis, teach specific material through a lecture or participation in a seminar course. The challenge in this part of the curriculum is to provide students with a coherent exposure to the fundamentals of bioscience necessary to becoming a proficient clinical and/or scientific learner. Often, however, the basic science lectures fail to connect to clinical medicine, leaving the student uncertain of the relevance of the body of knowledge that has been presented. Ludmerer, among others, has observed that, increasingly, basic science departments in medical schools resemble science departments in the university, with the result that "in the era of molecular medicine, the separation of research from education and practice (that is, the 'bench-bedside gap') became more pronounced than ever before" (Ludmerer 1999:292).

The UME clinical experience (primarily in the third and fourth UME years) and graduate medical education and training (GME) are largely conducted and overseen by community preceptors and by clinical faculty within university owned or affiliated teaching hospitals and clinics. The many years of clinical exposure and training, from internship through residency and fellowship, are taught and supervised largely by faculty and residents who have little or no formal training or skill development as educators. While "resident as teacher" programs have become popular in the past decade (one such program at the University of North Carolina–Chapel Hill is now in its 15th year), mentoring is often based on local traditions,

standards, and methods promulgated by particular professional societies or on the ad hoc style of the faculty member. Training is further heavily affected by the service demands of each clinical facility, whether hospital or outpatient clinic. Teaching content is too often anecdotal, not evidence-based, with too little attention to teaching statistical discernment skills. Educational policy and practice is also formulated and regulated by the dozens of professional societies and their certification boards as well as by UME, GME, and CME accrediting organizations.

After completion of formal training, physicians increasingly are expected to participate regularly in continuing medical education. CME is often sponsored by the pharmaceutical and medical device industries and professional societies, according to varying standards. CME is conducted largely outside the purview of AHCs.

The health professions' continued organization and development within traditional associations and specialty societies contribute to the maintenance of a diffuse patchwork of leadership and oversight in medical education. In a characteristically American adaptation of the traditional guild system in Great Britain, some degree of separation of powers has been achieved, with both the American Board of Medical Specialties (ABMS) and American Council of Graduate Medical Education (ACGME) exercising significant powers of oversight. The purpose of board certification, of course, is to certify a high level of competence in specialty training based upon performance on examinations. As yet, there is no assessment of actual clinical performance including data on patient outcomes. Today, the standard of board examination certification remains the magnetic pole toward which clinical departments and, by default, both undergraduate and postgraduate medicine are oriented.

The New Medical Marketplace

The collapse of the 20th century's last substantial effort at government-sponsored health care reform—the Clinton Administration's Health System Reform Act of 1993—resulted in the forces of the marketplace being unleashed with the mandate to improve health care services while lowering costs. Managed care organizations, the health care insurance industry, and a

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rapidly consolidating hospital industry combined to introduce and enforce rigorous cost control and utilization and/or productivity standards for health care providers. Health care spending and resources were further constrained by new federal initiatives. The most far-reaching was the Congressional Balanced Budget Act (BBA) of 1997, which mandated substantial cuts in health care spending. The BBA alone will have diverted an estimated $1 trillion from health care spending by the year 2007.

These new forces and policies have had a major impact on the teaching missions of AHCs. AHCs have been forced to adjust to price-based competition and the demand for unprecedented clinical productivity and efficiency. AHCs and their owned or affiliated hospitals and clinics have sought to invest in new information systems and to re-engineer their administrative operations. Medical school clinical faculty, especially, have been pressed to devote more time to revenue-producing clinical activities and to develop more efficient practice patterns. These changed and still unsettled conditions—especially the diversion of institutional resources and faculty effort to generating new revenue—have added new challenges for AHCs and the health professions in modernizing and fulfilling their educational missions. Incentive structures to support such reforms remain weak at the time of this writing.

However, the concerns with medical education long predate the advent of managed care. They range from issues of quality and communication skills to maintaining ongoing, lifetime competency. (See Exhibit 3, page 10.)

Managed care raised the issue of whether physicians and other health professionals were being properly trained to provide care that would be safe, efficient, and effective in a more competitive, resource-constrained market for health care services. A prior and enduring—and perhaps more fundamental—question is whether the training of our health professionals in the arts and sciences of health care essential to the changing needs of society is nearly as good as it could or should be. Despite the fact that a number of medical schools have improved the first two years of UME and that a very few specialties have made admirable efforts to refocus on educational priorities in GME, the con-

sensus is that health professional education is not nearly what it could be.

The Purposes of Health Professional Education

Discussion of the problems with health professional education must start with understanding and agreement on the purposes of such education. At a minimum, they include:

- Professional qualification—Providing opportunities for health professionals to acquire the knowledge, skills, values, and attitudes required for practice as a recognized specialist or generalist.

- Professional competence—Ensuring that, upon entering practice, health professionals possess the ability to perform the complex, integrative tasks required to provide high-quality health care in relevant venues.

- Career-long professional and clinical learning—Enabling health professionals to remain competent within the scope of their professional and practice activities throughout their professional lifetime.

In sum, the Blue Ridge Group believes that health professional education needs to embrace the attributes defined by the Institute of Medicine (Exhibit 3, page 10), requiring that health care be safe, effective, patient centered, timely, efficient, and equitable. Combined with the Blue Ridge definition of a value-driven health care system, adherence to performance standards set around these IOM attributes should define value in health care, especially in the context of managing the health of the entire population at the regional level.

To date, health professional education has focused on individual competencies and professional values, without relationship to the system in which these professionals practice and operate. To have a value-driven health care system in the future, system competence and professional values will need to be defined and incorporated into the education of health professionals at all levels of their education. The recent adoption by the ABMS and the ACGME of new core competencies is a move in this direction (ACGME 2001).

Exhibit 3: IOM Target Areas for System Improvement

In its report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, the IOM surveyed the broader landscape of quality issues in health care and found a large gap between the promise and the realities of the health care system (IOM 2001). Describing the last quarter of the 20th century as the "era of Brownian motion in health care," the report suggests that this tumultuous period of "mergers, acquisitions, and affiliations" has produced a great deal of organizational turmoil but little in the way of significant or lasting improvements in either the quality of health care or in the health status of the population. A central message is that care delivery in the future must be constructed on three pillars: scientific evidence, well-designed systems, and patient-centered care.

One of the most important findings is that our existing systems of care are inadequate to deal with the complexity of modern health care and the growth of the health sciences knowledge base. Health professionals cannot provide high-quality care in a delivery system with deficient processes, inadequate information systems, and change unmanaged to the point of turmoil. In a manner akin to many of the Blue Ridge Group's own past recommendations, the IOM described our health system overall as lacking clarity of purpose, commonality of interests, and the shared values necessary to guide the various constituents of the health care system—from patients to health professionals to policy makers—in support of system-wide improvement.

The IOM has proposed a national agenda that includes the adoption of a "national statement of purpose" for the health care system and a set of six "aims," or target areas, for improvements in health care systems. The Blue Ridge Group strongly endorses this effort and the set of proposed aims, which prescribe that health care should be:

- **Safe**—avoiding injuries to patients from the care that is intended to help them.
- **Effective**—providing services based on scientific knowledge to all who could benefit and refraining from providing services to those unlikely to benefit (avoiding underuse and overuse).
- **Patient-centered**—providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- **Timely**—reducing waits and sometimes harmful delays for both those who receive and those who give care.
- **Efficient**—avoiding waste, including waste of equipment, supplies, ideas, and energy.
- **Equitable**—providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socio-economic status (IOM 2001:6).

The Blue Ridge Group believes this statement of purpose reflects societal aspirations for our nation's health care system and that AHCs and the health professions should seek to align their missions and goals with these (Blue Ridge Group, Report 6, 2001b).

What Is Wrong with Health Professional Education?

There has long been clear evidence of variations in medical practice across the country (Wennberg & Gittleson 1982)—that doctors too often fail to prescribe clearly indicated therapies, that doctors overuse certain diagnostic and therapeutic modalities, and that doctors too often fail to use accepted prevention practices (Balas and Boren).

Some of these variations in quality of medical care can be attributed to problems with health care delivery systems and related variables. The dysfunction of our health care delivery system has been the subject of significant critique. (See, eg, Exhibit 3.) Yet it is likely that much of the

variation in practice behavior reflects the ways that doctors are educated and the habits and attitudes they adopt as they progress through the educational pipeline. When practicing physicians, including new practitioners, are asked if they were prepared adequately to deal with common problems they confront in their practices, they easily identify domains of their practices that were not adequately covered during their residency training (Blumenthal 2001). In addition, serious new concerns are being raised about the quality and efficacy of continuing medical education programs in helping physicians maintain their competence (Whitcomb 2002a).

As the 21st century dawned, a number of leading scholars and organizations have published significant studies that review and critique the status of health professional education and make recommendations for reform and improvement. In part, these studies compared the current situation with recommendations of reports from prior decades.

In the early 1980s, for instance, the Association of American Medical Colleges (AAMC) convened a panel of leading educators to review physician education and to make recommendations for improvement. A report (AAMC 1984) published by the Panel on the General Professional Education of Physicians and College Preparation for Medicine (GPEP) identified the clinical education of medical students as a serious weakness in the UME curriculum. In particular, the panel found that the third- and fourth-year UME clinical clerkships were often poorly structured and supervised, with little formal evaluation of the skills learned and experience gained.

The AAMC's GPEP report remains an important benchmark for all assessments of the medical education curriculum. Yet the evidence is that many of its most important recommendations remain to be implemented throughout medical education. In subsequent AAMC research and reports, there is an underlying and sometimes explicit concern that not enough progress is being made. In commentaries introducing a recent compendium of reform efforts in 10 medical schools, for example, Whitcomb and Ludmerer, two of the leading authorities on medical education policy and reform, describe

the general failure of medical schools to address fundamental problems with their programs of education and training (Milbank 2000).

Whitcomb reports that while many medical schools have instituted important reforms in the first two years of the UME curriculum, most have found it "difficult, if not impossible, to make fundamental changes in the last two years of the curriculum, when the most clinical education occurs" (Whitcomb 2000). Whitcomb goes on to describe a deep and documented reluctance in medical schools nationwide to change elective experiences "rooted in the tradition and the culture of medical schools' clinical departments" (Ibid:10).

Ludmerer is even more critical. While acknowledging that the compendium of reform efforts in the 10 medical schools shows that some are taking education reform seriously, he declares that, "the approaches described in the case studies are insufficient to prepare the nation's medical students properly for the practice of medicine in the 21st Century" (Ludmerer 2000). He finds three serious flaws. First, the molecular revolution in biomedical science has left medical schools without a cohesive curriculum or teachers sufficiently qualified to teach at the cutting edge " . . . in both the scientific and clinical disciplines." Second, students are not being prepared to treat and manage patients with chronic diseases, which are likely to dominate the practices of most physicians in this century. Third, and most important from his view, is that AHCs and their medical schools have failed to cultivate and maintain a proper learning environment. He cites educational venues and a health system and profession driven by market-oriented forces that are "rapidly destroying the learning environment of clinical education" (Ibid:17).

Reports have since issued from the IOM, the Commonwealth Fund, several medical specialty societies, and others. Together, they describe a medical education system that remains mired in many of the problems and limitations described almost 20 years ago in the GPEP report.

The Blue Ridge group agrees with the overwhelming body of evidence (see Exhibit 4, page 12) that medical education is faced with these and many similar shortcomings and challenges and that we can and must do better.

Exhibit 4: Summary of Major Reports of Ongoing Problems in Medical Education

The Commonwealth Fund

In April of 2002, the Commonwealth Fund Task Force on Academic Health Centers published its report, *Training Tomorrow's Doctors: The Medical Education Mission of Academic Health Centers.* Among its major findings, the report cites the following concerns:

- The clinical environment within AHCs (and their teaching hospitals) is widely perceived as unreceptive to medical education.
- Pressures on the clinical enterprise undermine financial support for medical education.
- The medical education activities of faculty are valued less than research and patient care at AHCs.
- AHCs vary considerably in their use of educational innovations and reforms and in addressing perceived inadequacies in their curriculum.
- The quality of GME instruction in nonhospital settings lags behind that found in traditional settings.
- The quality of training may vary systematically from one training program to another.
- The number of under-represented minorities in medical schools remains below their proportion in the population as a whole.
- Data are inadequate to gauge the performance of AHCs in conducting their educational missions.
- AHCs face significant challenges in fulfilling their educational roles (CFTF 2002).

The Association of American Medical Colleges

The AAMC has had a longstanding focus on reform of medical education. Its GPEP report documented many issues in medical education and outlined recommended reforms. The AAMC has continued to develop both research and programs designed to improve the continuum of medical education, from UME to GME to CME. In addition to a wide variety of working groups that have addressed the full range of education issues, the AAMC hosts a conference on Research in Medical Education (RIME) at its annual meeting, and the AAMC journal, *Academic Medicine,* seeks to establish and publish research and policy on health professional education, including a yearly supplement devoted to education issues.

Of its more recent contributions, several stand out.

- *Academic Medicine* has published several thematic issues and supplements, including
  > Issues and Strategies for Reform in Medical Education: Lessons from Eight Medical Schools, Supplement to *Academic Medicine,* September 1998
  > A Snapshot of Medical Students' Education at the Beginning of the 21st Century: Report from 130 Schools, Supplement to *Academic Medicine,* September 2000
  > Redefining Scholarship in Contemporary Academic Medicine, *Academic Medicine,* October 2002
  > Cultural Competency in Medical Education and Practice, Special Theme Issue of *Academic Medicine,* March 2002
- The Working Group on Institutional Accountability for Graduate Medical Education has been issuing important reports designed to provide guidance to institutions on assuming greater responsibility for the quality and conduct of GME programs.
- In conjunction with the Milbank Memorial Fund, the AAMC has recently published a new survey of curricular reform, "The Education of Medical Students: Ten Stories of Curriculum Change" (Milbank 2000), profiling 10 innovative programs with a range of reform initiatives.

The Institute of Medicine

Two major studies by the Institute of Medicine surveyed the vast body of research and commentary on the status of health care in our nation and found significant problems (IOM 2000 and 2001). In its second report, *Crossing the Quality Chasm: A New Health System for*

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the *21st Century,* the IOM surveyed the broader landscape of quality issues in health care and concluded that existing care systems are inadequate to the complexity of modern health care and to the challenge of translating the fast-expanding knowledge base of the health sciences into broadly available health services (IOM 2001). The IOM also concluded that current education and training models were not optimally designed to prepare professionals for a new era of health care.

As a result, in June 2002, the IOM convened a multidisciplinary summit of leaders within the health professions to chart a course for restructuring the continuum of clinical educa-

tion. The resulting report, *Health Professions Education: A Bridge to Quality,* recommends 10 steps designed to bring together AHC and educational leaders, professional associations, and accrediting, certifying, and licensing bodies to fulfill an overarching vision for all clinical education. The vision includes the following basic competencies:

"All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics" (IOM 2003:3).

This report and its recommendations deserve widespread discussion and adoption.

Achieving Successful Reform in Health Professional Education and Training

In our review of the literature and research on educational reform, the Blue Ridge Group found an abundance of sound recommendations, experiments, and pilot programs that by now could or should have formed the basis for widespread and needed overhaul in health professional education. The fact that needed reforms have not been broadly adopted led us to conclude that it is not the dearth of good ideas and good research that has stymied reform. Indeed, the most useful contribution to educational reform will be to identify critical and persistent factors that have slowed or stymied adoption of needed reforms and to recommend action to address these factors.

The Blue Ridge Group has identified the following five factors as the most persistent and critical in slowing needed reform. These factors must be addressed as a precondition to planning and enacting system-wide educational reform. Therefore, not only AHCs but also the multiple bodies that participate in overseeing and regulating medical education must address these preconditions as their highest priority.

I. The art and science of education must

become an explicit, manifest priority of the leadership of academic health centers.

II. Health professional schools must pioneer and use advances in knowledge concerning cognitive development, styles of learning, and education theory and practice.

III. Health professional schools must provide sufficient support and relevant rewards to faculty, volunteers, and residents who teach.

IV. AHCs must structure appropriate and consistent learning environments to meet the changing nature of illness and societal needs.

V. The regulatory framework must be streamlined and rationalized.

I. THE ART AND SCIENCE OF EDUCATION MUST BECOME AN EXPLICIT, MANIFEST PRIORITY OF THE LEADERSHIP OF ACADEMIC HEALTH CENTERS.

The balance of evidence shows that since the middle of the 20th century AHCs have devoted neither the leadership nor the resources to nurturing the art and science of health professional education that they have devoted to their other two main mission areas, research and clinical care (Ludmerer 1999).

It has been well documented that both

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Professionalism and the Shift Mentality

How to Reconcile Patient Ownership With Limited Work Hours

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The Halstedian tradition imbued the art of surgery with a deeply rooted sense of responsibility and a powerful work ethic. As apprentice surgeons, junior residents gained reputations for professionalism when they immersed themselves in patient care so deeply and for such long periods that they "owned" their patients. No detail of patient care was so trivial that it could escape the effective intern.

The introduction of strict limits on resident work hours brought many positive changes to training programs nationwide. An unintended consequence of this policy is the potential for the loss of "patient ownership" by trainees. Patient ownership is the philosophy that one knows everything about one's patients and does everything for them. It is a central tenet of surgical professionalism dating back decades and is fundamental when facing critical patient care decisions. The shortened duty periods and subsequent frequent transfer of responsibility to others pose a challenge to the trainee's sense of professionalism and the continuity of patient care. This challenge must be addressed head-on.

Residents must learn a New Professionalism that stems from sharing responsibility for the care of their patients. They must be given a new understanding of their responsibilities, new methods for organizing and sharing patient information, and new skills for directing team-based care as they work toward competency in systems-based practice. Residents, particularly junior residents, may lack many of these skills. The craft of conveying pertinent patient data to permit team-based care must be learned, just as all other forms of clinical communication are learned. And the unwillingness to relinquish patient ownership—the deep-seated desire to say, "Nothing to do, I'll grab a nap and be back in a couple of hours"—must be unlearned.

Surgical training in America is facing fundamental changes. Limited work hours for trainees, the ever-increasing complexity of medical care, and the participation of many more individuals in the care of a patient threaten to undermine the common view of professionalism that has characterized surgery and surgeons. The traditional sense of professionalism called for strict and unlimited devotion of a clinician's time to the care of every patient. Surgery and other disciplines have moved to a systems-based approach that involves health care delivery by teams of providers rather than by independent clinicians. This poses a challenge, particularly in the training environment where faculty and residents are bound by different rules. The system must respond by redesigning surgical training to teach the best practice of this team-based care while ensuring that the essence of professionalism is enhanced.

We believe that a new approach to professionalism must be taught, one that includes the following elements: (1) a clear understanding on the part of both teachers and learners of what trainees are responsible for in this new era; (2) a new way for residents to approach their responsibility to the total delivery of care to a patient ("patient ownership"); (3) educational programs and patient care systems

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that enhance communication and make team-based care easier and more logical to practice than individual provider-based care; and (4) surgical educators who can be inspiring role models with all of these concepts.

This article discusses the traditional sense of professionalism among surgical trainees and the conventional characteristics of patient ownership. It describes a conflict among trainees today who want to demonstrate traditional professionalism but are thwarted by new work-hour limits. It then develops the concept of engendering among trainees a New Professionalism—a concept based on emerging educational programs, core competencies, and team-based patient care systems. This concept can help residents reconcile professionalism with limited work hours while also delivering the best surgical care and education.

PATIENT OWNERSHIP

The method of teaching surgery to trainees advanced by Dr William S. Halsted in his 1904 address at Yale University[1] has been the foundation of surgical training for a century in the United States. It demands total dedication to learning the art of surgery and to caring for one's patients. These principles were the basic fiber from which recent surgical training was woven.[2] Trainees performed every aspect of care for their patients: they wrote orders, scheduled tests, called consultants, counseled patients and family members, formulated diagnostic and therapeutic plans, and carried out those plans under the scrutiny and direction of their supervisors.[3] Residents often lived in the hospital and personally performed the majority of patient care tasks, including drawing blood and transporting patients.[4] Those days are now sometimes called "the days of the giants," when residents were always on duty and available for their patients.[5,6] Residents assumed the role of expert constant observers, who knew all the recent events, recognized changes in a patient's condition, and could judge the impact of therapeutic interventions.[7] In surgery as in many specialties, this role often demanded 100 or more hours a week devoted to the performance of patient care tasks.[8] The unlimited hours permitted residents 2 important opportunities: the time to track down every detail about their patients and the opportunity to participate in almost every diagnostic or therapeutic task done with their patients. In this way, trainees displayed what is often referred to as patient ownership. They knew everything about their patients and did everything for their patients. This was the way in which residents built their reputations: no detail of patient care was so trivial that it could escape the effective intern. That dedication, together with the rite of passage through long working hours, was an effective way—perhaps the most important of a very few ways—for trainees to demonstrate a strong work ethic and a sense of professionalism.[9]

RESIDENT PROFESSIONALISM

Surgical trainees working in a system of graded responsibility have limited opportunities to display the kind of professionalism that recent consensus literature describes, such as principles of social justice, commit-

ments to improving access to care, managing conflicts of interest, and a just distribution of finite resources.[10,11] To a fairly limited degree, residents are able to display other aspects of professionalism, like honesty, integrity, competence, cultural sensitivity, and timely responsiveness.[12] But for the majority of junior surgical trainees, professionalism chiefly means a feeling of obligation and a willingness to care for every need of each of their patients, no matter when the need arises or from whom.[13] This feeling includes the instinct that patients *belong*, in some way, to trainees who are responsible for them.[14] The impact of attending expectations, resident beliefs, and patient needs socializes residents to understand that they must display professionalism by, among other things, showing a high degree of patient ownership. Residents traditionally understood that they must know everything about their patients and do everything for their patients, that they must finish what they started for their patients. Residents see this in their mentors, who often resist the external directive to tell a young, bright trainee surgeon that it is time to leave.[13] This reinforces deeply rooted feelings among trainees of personal sacrifice and beneficence that constitute the very reason many of them joined medicine, and those feelings are the source of a vexing conflict now faced by residents.[14]

THE CONFLICTED RESIDENT

Left to their own devices, most residents today would continue to show the kind of concern for their patients that their supervisors hold sacred[6] and that likely drew the trainees to medicine to begin with; they would be unwilling to leave the hospital until everything was prepared for a brief and uneventful night of cross-coverage by a colleague.[14] These are the values that most residents continue to bring to medicine. In 1993, 4 years after New York enacted duty-hour regulations, interns continued to feel ownership for patients to the extent that they were uncomfortable leaving the hospital on time.[14] As duty-hour violations continued there, calls for the revocation of physician licenses came.[15] The interns were commanded to leave on time, while being made to feel that their new lives of enforced shift work would ensure failure to build a sense of responsibility that is one of the basic demands of the medical profession.[16,17] Many professionals echoed concerns about making the clock a higher priority than patient care and education.[9,14,18] "The ethic of commitment to the patient may be traded for a 'shift mentality.'"[19,11] Worse yet, residents all too well understood that the increased turnover of patient care responsibility risked the sacred patient-doctor relationship.[19] "By interfering with optimal training as we have defined it, these regulations place patients at as great a risk from lack of professional commitment as any perceived risk from sleepy interns."[14,6,20] Faced with no instructions on how to reconcile the desire to demonstrate patient ownership with the desire to comply with the new rules, and shown no role models, residents are struggling. Some thwart the rules and act out their values: they sign out their duties but remain in the hospital to talk with families.[20] Others resign themselves to the new order and risk perpetuating the stereotype of the post-

modern resident: a wide-awake technician, lacking in professional ethics, here to replace kind-hearted, sleep-deprived healers.[3]

BARRIERS TO RESOLUTION

Trainees today know they must comply with the duty-hour restrictions. Many also believe that reasonable limits on working hours may even help them become more humane physicians by improving their morale and their mood in patient interactions.[4,21] The critical obstacle that most residents find difficult to surmount is how to reconcile the required schedule with a way to fulfill their sense of obligation. With no role models or advice from senior surgeons, the answer to this problem remains elusive. An excellent discussion in 1993 of the attitudes of 21 New York interns categorized 4 areas of conflict the trainees experienced as a consequence of limited work hours[14]: (1) concern for their patients and unwillingness to leave them; (2) unclear parameters to guide the decision about when to stop working; (3) deterrents against acknowledging and acting on their knowledge or skill limitations; and (4) conflict between delegating responsibility and retaining control over patient care. Furthermore, while work-hour restrictions are a major topic today, they are but one of several factors affecting surgical training.[22] A variety of factors today prevent residents from living up to their values of being able to know everything about their patients and do everything for their patients. The shift of care delivery to ambulatory centers means that the patients under a resident's care today are more complicated and sicker than before. In addition, an ever-increasing burden of documentation and order justification has increased the volume of noneducational scut work, which decreases resident time with patients.[1,5,23] As a result, task-saturated covering residents often see their load of patients as a series of items on a to-do list.[5] A greater array of diagnostic and therapeutic interventions undertaken by consulting specialists further restricts residents from the ability to do everything for their patients and adds to the variety of places residents have to search for information about their patients—particularly when current systems are not designed to support close interaction between multiple specialty teams with the patient at the center and a clear leader who organizes the effort and flow of information. It is in these situations that residents stop being doctors and instead become the glue that holds together poorly designed methods of managing health care information and the clinical providers who need that information.[7]

THE NEW PROFESSIONALISM

We feel that this situation provides a unique opportunity to design an approach that addresses this apparent conflict imposed on residents by the demands of limited work hours and the expectation of constant dedication to their patients. This dichotomy is also expressed in the apparently opposing forces of 2 of the new Accreditation Council for Graduate Medical Education (ACGME) competencies. Systems-based practice emphasizes care delivery by a system or a team, whereas the

traditional view of professionalism emphasizes personal attention to every detail of patient care regardless of time. To reconcile this conflict, we have set down certain principles that will be the basis for what we term a New Professionalism for residents.

TELL TRAINEES WHAT TO DO

Clear expectations are needed that delineate what residents are expected to be able to know about their own patients and those they cross-cover and how much they are expected to be able to do for those patients. Unless these are defined, and we believe that in most circumstances and places they are not, residents fall back on an increasingly frequent refrain: "that is not my patient."[5] Cross-covering residents are often given several lists full of patients and no expressed expectation regarding what is supposed to be known about each patient; they could never be able to know all of them well. As a consequence, residents don't consider these "their patients."[5] The opportunity to include these care providers and enlarge a team—centered on the patient—is missed. Another common observation is the variation among residents with respect to how much unfinished work is left for others and who remains beyond their designated time when a patient's condition is changing.[14,21] The residents in the New York survey singled this out as a frequent cause of anxiety: How much work am I creating for my fellow residents? Is it fair?[14] A clear understanding of patient responsibility should be made. Accountability can then be rightfully required and evaluated.[5] If residents can no longer know everything, how much must they know? If residents can no longer do everything, how much must they do? In the **Table**, we include examples of the way expectations could be changed to permit residents a clear understanding of how to display professionalism while practicing systems-based care and meeting work-hour limits.

GIVE TRAINEES THE TOOLS TO DO IT

Today's teams of residents must function with high reliability in an error-prone field where information is often lacking and the best course of action is unclear. Despite this, they receive no training in team resource management or leadership skills, and frequently roles are poorly described.[24] When time was more available, the junior trainees, not knowing what specific information or tasks they would be responsible for, chose to become responsible for all information and all tasks. While this was an ineffective use of resources, it managed to satisfy all the needs of the patients. That unlimited time is not permitted anymore. Residents need new skills and new tools to help them effectively deploy resources, delegate tasks, and acquire and organize the information needed to manage uncertainty.

Resource Management

Airline safety improvements in the 1970s that led to the concept of Crew Resource Management revealed key characteristics that are needed when managing rapidly chang-

Table. Example Expectations That Could Be Established for Residents Under the New Professionalism

Situation	The Old Professionalism	The New Professionalism
Just as the resident is preparing to leave, his or her patient urgently needs a chest tube.	Abort departure. Perform procedure; remain in house until after personally reviewing the follow-up chest x-ray.	Delay departure. Perform procedure, describe it well to the covering resident and supervising resident, and confirm mutual understanding that the colleague will review the film. Initiate redundant lines of communication by discussing plan for x-ray with nurse and patient or patient's family.
Patient conditions change and the family wants a conference at the end of a resident's shift.	Abort departure. Remain at the bedside with the family until all of their concerns are addressed.	Delay departure. Confer with teammates and select the most informed member, likely a senior resident, to join in the family conference. Answer questions as a team and inform the family that the resident must depart. The other team member remains with the family for additional discussion.
Consultant recommendations appear late in the day at the end of a resident's shift and include information and procedures for his or her patient.	Abort departure. Discuss new recommendations with the team; personally perform the recommended procedures and remain with the patient until everything is finished.	Delay departure. Briefly review the new recommendations with the team and clearly designate the team members who will address each one, including procedures. Establish lines of communication to ensure that the results all return to the team and are ready to be quickly understood by the resident when he or she returns the next day.

ing aviation situations involving unclear outcomes, insufficient information, and a number of complex systems and people.[25] These characteristics include knowledge of how to delegate certain tasks, appropriate distribution of work, specific assignment of responsibilities, setting priorities, using available data, communicating clearly the intent and the plans, and monitoring progress.[26] Training professionals in the management of information and people during high-stress work is credited with a substantial increase in efficiency and safety in aviation, and there are many similarities among the fields of anesthesia, surgery, and aviation.[27] Yet, graduate medical trainees receive only minimal education in leadership and team management skills. Leadership training and a formal approach to resource management should be part of residency.[24] In recent studies of shortened resident work hours, it was noted that among groups with poor team performance, the night-call interns appeared to know substantially less about the patients on service.[28] In the past, such lapses were prevented because resident teams left one of their own residents in house to cover their patients.[12] Now, less time spent with patients breaks the narrative flow of patient illness and scatters this vital information among team members.[3] Residents should be taught how to use patient care resources available to them, appropriately distribute the workload among team members, efficiently use patient information systems, communicate appropriately, and effectively construct contingency plans. These management techniques are needed not only for operating room safety and efficiency but for the effective management of patients on the wards and during daily sign out to cross-covering teams.

Communication Skills

Without question, the reduced work-hour regulations increase the number of residents who care for a given pa-

tient on any particular day and subsequently increase the demand for clear, complete, and effective transfer of information.[29] Some attending surgeons do this exceedingly well today. They learned these skills through years of training and can now quickly summarize and communicate pertinent information to a covering colleague. Yet, despite the extensive time and effort devoted to train medical students and residents how to communicate a history and physical examination, how to organize a presentation for rounds, and how to structure a discharge summary or daily patient progress note, almost no effort has been devoted to teaching a formal organization of information at the transfer of care, or sign out. In fact, this remains the most poorly understood exchange of information in all of medicine.[29] Understanding it, improving it, and teaching the best methods for conducting it may be the key to solving much of the continuity-of-care worries that plague training programs today. For example, formal sign-out rounds are recommended by some as a means to improve safety.[24] However it is done, transmitting important sign-out information to support patient care is a critical skill that must be taught, and residents should be evaluated on that skill, using face-to-face communication of patient information in the presence of senior team members as the gold standard.[3]

Better Ways to Organize Data

We know that implementing well-designed systems to organize, standardize, and exchange patient information among clinicians can reduce the excess risk that accompanies cross-coverage.[30] Techniques such as standardized sign-out templates and scheduled time for care transfer have been employed successfully by others.[28,31] In the era of limited work hours, it is more important than ever that the essential information about every patient is organized in a way that is designed for clinicians, easily accessible, and effectively transferable among

care team members.[3] Computerized systems designed to support high-quality sign out must be implemented to help residents manage clinical information and communicate their own brief descriptions of patient progress.[24] We have developed such a system that was quickly embraced by residents at our institution as a powerful tool for organizing team-based lists of patients; for automatically gathering patient data from a variety of electronic systems and presenting it in a useful format; and for providing residents a way to communicate notes, to-do lists, and special concerns they might not otherwise document elsewhere.[32] Others have shown that such systems can actually reduce the risk of preventable errors.[33]

Educational Benefits of Sign-Out Tools

Teaching structured sign-out methods and introducing computerized systems designed to support sign out can bring educational advantages as well as patient care improvement. When residents perform well-conducted sign out, they display the following skills: organized, thorough *patient care*; applied *medical knowledge*; effective *interpersonal and communication skills*; and, perhaps most rewarding for the resident, *professionalism*. By performing conscientious and detailed sign out, ensuring that all patient issues are addressed, that all tasks are assigned to colleagues who understand them and have the skills to complete them, and by establishing redundant lines of communication, residents demonstrate their New Professionalism. In the course of that activity, residents also demonstrate to their teachers how well they are progressing toward mastering 4 different ACGME competencies.[34]

SHOW THEM HOW

The changing nature of surgical training presents an opportunity for today's attendings to teach today's medicine: how large volumes of poorly organized patient information can be effectively managed to guide clinical thinking and decision making; how leaders effectively manage their team to maximize information sharing and continuously improve patient care quality; how one capitalizes on brief encounters with patients to earn their trust; and how time can be effectively organized among patient care, administration, continuing education, and personal development.[4] We must beware of sending mixed signals to trainees. Many programs have adopted the new duty-hour limitations, yet violations are common. As Dr Leach[7] commented, "Any gap between the profession's stated values and its behaviors weakens the profession."[7(p116)] In the case of residents trying to understand their roles and obligations, the profession must stop sending mixed messages to residents, who build their values system based on how their leaders behave. Drs Chao and Wallack[35] pointed out, "How can we expect such behavior of them if we do not set the example?"[35(p15)] Today's attendings can lead their residents toward a New Professionalism that is a commitment to work collaboratively to maximize the effectiveness of patient care in an environment of efficiency, safety, and compassion. As the concept of systems-based practice advances, these same attendings can model effective communication that is nec-

essary for team-based medicine. Faculty mentors should make time to discuss professionalism one-on-one with their residents, which has been shown to be effective in initiating reflection on such values among trainees.[10,36] In this way, attendings can guide the lasting values of future surgeons. As Dr Ofri[6] wrote, "If we sense 'shift' mentality setting in, we can be glad we are in a position to model the professionalism we deem vital."[6(p162)]

WHAT ABOUT EDUCATION?

Graduate surgical education in the United States has typically been regarded as the most effective training experience anywhere. "The hallmark of this experience is a commitment to patient care without regard to time, day of the week, hours worked, or on-call schedule. It is the patient's welfare that comes first."[1(p1)] Now, the call has gone out: find ways to continue the same high standards of surgical education begun by Halsted that fit today's health care system.[15] In other words, change the *personal* ownership of patient care into organized, highly effective *team* ownership of patient care consistent with the systems-based approach. Many of the feared educational consequences of shortened work hours have not materialized. Decreased time spent on duty did not minimize order-writing exposure or test scheduling by interns.[18] Attentional failures were decreased when weekly hours were reduced by eliminating extended shifts.[37] This improvement will presumably apply to learning accomplished during conferences on postcall days. American Board of Surgery In-Training Examination (ABSITE) scores at some programs improved.[2] As others have noted, if we can approach the reconciliation of educational objectives with work-hour limits as a systems problem, it can be solved.[5] Residents know that these changes will have a profound impact on the way they learn to become surgeons; with careful guidance, these changes could reward our profession with better trained and more compassionate colleagues than ever before.

CONCLUSIONS

At issue here is how we view the choices and possible outcomes. We can choose to see a dichotomy between residents who view themselves as having a traditional commitment to their job and their patients beyond schedules and fatigue, and residents who see themselves as personnel, who react to working conditions as other laborers do and require accommodation.[14] However, we propose seeing it differently: a dichotomy between residents trained to fight fatigue in favor of a dedication to patients, and residents trained to respect human limitations, who seamlessly coordinate patient care duties among a team of informed providers. The change that is needed goes beyond an adjustment of schedules and a lecture on competencies. The change that is needed must affect the very ethos of residency.[39] We must reconcile what residents are supposed to do, how they are supposed to relate to patients, the methods by which they are supposed to work together, and the way they must view themselves. The characteristics of those new residents, those *new professionals* must be taught to residents, dem-

onstrated by attendings, and understood by patients. The traditions of duty, honor, and responsibility firmly established in surgical training over the past century must not be discarded; rather, we must maintain those traditions through different means. Responding to this challenge in such a constructive way will attract better-quality residents, improve the public's perception of our discipline, and retain governance within the profession.[13] When we are finished, we will no longer hear "that is not my patient." Residents will instinctively say instead, "that is our patient," and they will care for him or her better than ever before.

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